The Goulstonian Lectures
ON
THE CHEMISTRY AND PATHOLOGY OF GOUT.

Delivered before the Royal College of Physicians of London,

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LECTURE I.[1]

Delivered on March 23rd.

MR. PRESIDENT AND GENTLEMEN,—When I accepted the duty of delivering the Goulstonian Lectures for this year I was deeply sensible of the honour conferred upon me and of the serious responsibility that I incurred. As the youngest Fellow of this College I should, perhaps, not have ventured to discourse to you on the subject of gout—a subject which has been so enriched and so ably dealt with in the past by many distinguished Fellows of the College—were it not that I thought the occasion was a convenient one to briefly review the various opinions held as to the causation and nature of gout, and at the same time to place before you the results of some experimental work that I have been conducting on the chemistry and pathology of this disease. As I propose to continue and extend this line of work I can only in these lectures lay before you the results that I have so far obtained and the conclusions that I have arrived at from those results. I must therefore request your indulgence for the somewhat fragmentary nature of the experimental work.

Gout is the manifestation of a number of morbid tendencies, some of which may be inherited and some acquired, and which result in the different diseases associated with the arthritic diathesis. If the joints are affected articular or regular gout results; if other organs or tissues are affected then irregular gout is produced. Gout is associated with the presence of an excess of uric acid in the blood, and the questions that I propose to discuss in these lectures mainly resolve themselves into the mode or modes by which the uric acid is produced and introduced into the blood, the source or sources of its production, the relationship that it bears to the gouty paroxysm and to the other manifestations of gout, and the factors or conditions which influence its formation and its injurious action.

Of the various theories to account for the production of gout the humoral theories have been to the front for many centuries at various periods in the history of the disease. Galen was one of the first to teach that tophi arose from the desiccation of collected and pathologically altered humours. Cullen, who was the great opponent of the ancient humoral theory of gout in the latter half of the last century, admitted, however, that in some instances a peculiar matter appears in gouty patients, but he considered that it was the effect and not the cause of the malady. Uric acid was discovered in the urine by Scheele in 1775, and in 1787 Wollaston demonstrated its presence in gouty concretions. These discoveries did not, however, bring to light the important part played by uric acid in gout. It was in 1847—just half a century ago—that a distinguished Fellow of this College, Sir Alfred Garrod, first found uric acid in the blood of gouty subjects in the form of a sodium salt. The discovery of uric acid in the blood of gouty patients eventually led to the much discussed question as to whether it was the cause or the result of gout. Those who held the former view were in their turn divided as to whether the uric acid compound only exerted its baneful effects when it had crystallised out of the blood and had become deposited in the affected tissues, or whether while still circulating in the blood it exercised a true toxic influence. The various views held as to the primary cause of gout may be classified into the three following groups: (1) excess of uric acid regarded as the primary cause; (2) morbid changes in the structure of tissues regarded as the primary cause; and (3) nervous disturbance regarded as the primary cause. I propose to briefly pass in review the various opinions held as to the primary causation of gout, adopting the classification just given.

1. EXCESS OF URIC ACID REGARDED AS THE PRIMARY CAUSE OF GOUT.

This group may be divided into two sections accordingly as the uric acid compound is regarded as exerting its baneful effect in the crystalline state or in the dissolved state.

I. *The uric acid compound regarded as acting passively and physically while in the crystalline state.*—Sir Alfred Garrod and Sir William Roberts are the two principal exponents of this view, which regards gout—in so far as its phenomena depend on uric acid—as a disease the manifestations of which are proximately due to mechanical injury. Sir Alfred Garrod holds that every paroxysm of gout is attended by a crystalline deposit of sodium biurate and that this deposit exercises chiefly a mechanical effect. He explains, in connexion with articular gout, that when the blood for some reason or other is incapable of holding the uric acid compound in solution it is deposited in an articular cartilage which is specially predisposed for its reception. Such predisposition is generally caused by its being the seat of former injury or disease. The crystallisation of the biurate within the interstices of the cartilage then provokes the inflammatory changes, so that the deposition is the cause of the inflammation. Sir William Roberts is of opinion that uric acid probably does not possess any inherent poisonous quality and that as long as it remains in solution it produces no harmful results. The mischief that it is capable of producing only results from its precipitation or crystallisation as sodium biurate in the tissues or fluids of the body. He considers that the inflammation, pain, swelling, and the remoter secondary degenerative changes of regular gout are quite explicable by regarding the crystalline urates which are precipitated in the cartilaginous and fibrous structures of the joints as exerting a mechanical action as foreign bodies. He even considers that the manifestations of irregular gout may be due, like the arthritic manifestations, to uratic deposition: that is, to actual precipitation of crystals of sodium biurate into the connective and fibrous structures of the implicated organs, whether the liver, heart, lungs, or brain, or into the fibrous sheaths of the nerves controlling the functions of the affected viscera. Sir William Roberts is further of opinion that the presence in the blood of scattered needles of sodium biurate might constitute foci around which clotting might take place; and that the thromboses not unfrequently observed in gouty cases might thus be accounted for. I shall have occasion to refer later to the various localities in the body, apart from the joints, in which uratic deposits have been found; but as regards the possible deposition of sodium biurate in nervous structures constituting the exciting cause of some of the pains and affections of different viscera peculiar to irregular gout, it may be of interest to mention here the following facts. Crystals of sodium biurate have been found by Watson, Gairdner, and Dafour on the cerebral meninges; by Schröder van der Kolk in the neurilemma of peripheral nerves; and by Cornil in the cerebro-spinal fluid.

With regard to the manifestations of irregular gout being due to uratic deposits in the affected viscera, it is true that observations on the subject are very limited in number. But in the first place it should be remembered that such irregular uratic deposits are extremely likely to escape observation in the post-mortem room unless very carefully looked for by the aid of the microscope; and in the second place it is highly probable that such deposits would become dissolved during life, as the attack of irregular gout passes off. Cornil and Ranvier also favour the idea that the crystalline uratic deposit in cartilages produces inflammatory changes by its mechanical irritation.

The question might be raised that if the crystalline biurate always acts as an irritant, why should not the semi-solid urinary excrement of birds and serpents set up kidney mischief by acting as an irritant to the kidneys during its excretion. The reason is that the urinary excrement of birds and serpents is composed of an amorphous quadriurate, and that in the amorphous condition it is incapable of acting as an irritant. Moreover, it is possible, as Sir William

[1] Lecture II. was delivered on March 25th, and Lecture III. will be delivered on March 30th, 1897.

Roberts has suggested, that the uratic excrement passes through the tubules of the kidneys of birds and reptiles in the gelatinous form, which could not produce the mechanical irritation that a crystalline deposit would be liable to cause.

II. *The uric acid compound regarded as acting as a poison or irritant while in the dissolved state.*—This view, while holding that the uric acid compound is the primary cause of gout, regards it as producing morbid changes in the structure of tissues while remaining in the dissolved state. Many writers and observers have supported the view that, apart from the local trouble in the joints caused by the deposited sodium biurate acting as an irritant, the soluble uric acid compound which is circulating in the fluids of the body acts as a poison, the toxic effects of which are responsible for a number of the symptoms associated with the gouty state. Pfeiffer holds the somewhat peculiar view that a compound of uric acid is deposited in both healthy and diseased portions of the body—apparently without producing any marked symptoms—and that an acute attack of gout is caused by the blood re-dissolving this deposited uric acid compound owing to a temporary increase in the alkalinity of the blood, and that dissolved in the blood in this concentrated form the uric acid compound acts as a chemical poison. That this view is untenable is evident when it is remembered that uric acid is deposited as the sodium biurate, and, as will be shown later, the solubility of this body in a fluid medium is not heightened by an increased alkalinity of that medium. Sir William Roberts[2] argues that the acceptance of the theory that uric acid possesses a toxic action is difficult for the following two reasons: (1) that there is no direct experimental proof that uric acid is a toxic agent; and (2) that although the fluids of the body of a gouty man on the eve of an outbreak of acute gout are impregnated with sodium biurate to saturation, yet such a person does not show any signs of poisoning, but enjoys complete immunity from toxic symptoms until the sudden advent of the arthritic attack. Another fact which is strongly opposed to the view that uric acid is a toxic agent is that in cases of leucocythæmia and severe anæmia the blood is frequently highly charged with uric acid without the production of any toxic symptoms that could be referred to the uric acid.

Kolisch[3] considers that some antecedents or allies of uric acid are responsible for the toxic effect which he believes constitutes the primary cause of gout. His view is that the graver manifestations of gout only make their appearance when the functions of the kidneys become impaired from any cause, and since he finds that in the urine of the gouty there is an increase of alloxuric substances, and also that alloxur bases cause changes in the kidneys resembling parenchymatous degeneration, he infers that these bases are concerned in the production of the kidney affection which precedes the development of gout. His theory is that during normal action of the kidneys the greater part of the alloxur bases is excreted as uric acid; but when the structures which form uric acid are enfeebled there is an increased excretion of alloxur bases with concomitant toxic effects. Kolisch's views have received some confirmation by Weintraud,[4] who has also found an excessive excretion of alloxuric substances in the urine of gouty patients. On the other hand, they are controverted by Schmoll,[5] who in one case of chronic gout did not find any increased excretion of alloxuric substances.

2. MORBID CHANGES IN THE STRUCTURE OF TISSUES REGARDED AS THE PRIMARY CAUSE OF GOUT.

This group may be divided into two sections accordingly as the morbid changes are produced by the presence of a soluble urate or not.

I. *Necrotic changes in the affected tissues regarded as the primary cause of gout, the necrosis being due to the presence of dissolved urates.*—Ebstein,[6] who has devoted a considerable amount of time to the experimental study of the causation of gout, is the great exponent of this view. His theory is that a destructive or, as he terms it, a necrotising process is produced in the cartilages or other implicated tissues by uric acid in one form of combination, and that following this the uric acid in another form of combination is deposited in the necrosed areas. In other words, that a destructive process always precedes the process of deposition, both processes being due to uric acid, but in different states of combination. Ebstein maintains that uratic crystals only form in necrotic tissues—never in healthy tissues. He regards the necrosis of tissue and the subsequent uratic deposits as together constituting the characteristic *ensemble* of the gouty process. His theory assumes that the irritant is the neutral sodium urate in the dissolved state, and that the first step in the gouty process consists in a stasis of the lymph stream, followed by the infiltration of the tissue in circumscribed areas by the lymph containing the dissolved neutral urate. The neutral urate, according to his view, acts as a chemical irritant, and sets up a necrotising process in the implicated tissues, and finally produces complete necrosis of the tissues in the affected areas. The necrotising and necrotic portions of the tissues provoke irritation of the surrounding parts and so produce the inflammatory phenomena of gout. Ebstein assumes that the process of necrosis generates a free acid, which converts the neutral urate present in the fluids of the body into the acid urate, which substance is then deposited in the crystalline form in the fully necrosed areas. No mention is made of the nature or name of this hypothetical acid. In support of this theory Ebstein depends upon two different classes of experiments that he performed. One class consisted of his examination of the organs and tissues of birds that he considered he had rendered gouty by preventing the elimination of their urinary secretion. The other class of experiments consisted of observations on the irritant effect of a solution of a sodium urate on the delicate corneal tissue of the eye. As I venture to differ from the deductions that Ebstein has drawn from his experiments and observations, I propose to describe his methods of experimentation and to briefly criticise his deductions therefrom.

Ebstein's first series of experiments consisted in an endeavour to induce in cocks a condition which, from the anatomical point of view, he considered was analogous to the gouty state in man. This he effected by preventing the elimination of their urinary uratic secretion in two ways—(*a*) by ligaturing the two ureters and so damming back upon the circulation the urates which would otherwise have passed away; and (*b*) by administering to the cocks small and repeated subcutaneous injections of the neutral potassium chromate, which Ebstein considers inhibits the passage of uric acid through the kidneys by its action on the renal parenchyma, and so causes a damming back upon the circulation of a portion of the urates which normally are excreted in their entirety by the kidneys. In the bodies of the birds experimented on uratic deposits were found in the articulations, in the tendon sheaths, in the liver, and in the muscular tissues. Ebstein found that the deposition of urates was much more copious and more widely spread in the cocks experimented on by injection of potassium chromate than in those whose ureters were ligatured. This difference he referred to the fact that he could keep the birds alive for a long time while subjecting them to the action of potassium chromate, whereas after ligaturing both ureters they as a rule only lived for about twenty-four hours. As the result of these experiments Ebstein came to the following conclusions: (1) that necrosing and necrotic processes are developed in various organs as the result of some irritant; (2) that uratic deposits form in the necrotic areas which in appearance resemble the gouty deposits of man; and (3) that a reactive inflammation, with infiltration of small cells, is set up in the neighbourhood of these necrotic areas. This class of experiments, therefore, consisted of observations of the uratic deposits formed in fowls when the elimination of their uric acid is prevented, either by ligaturing the ureters or by the progressive disablement of the kidneys by repeated subcutaneous injections of potassium chromate. I do not think that the morbid processes occurring under these conditions in fowls can be considered as in any sense comparable with those occurring in connexion with gout in man. Ebstein found uratic deposits in the liver and muscular tissues of the birds experimented on, localities where they are not found, at all events to any appreciable extent, in human gout. From this one may fairly conclude that the two processes cannot be considered as comparable. Moreover, since the fowl produces and eliminates by the kidneys so large a quantity of urates, the more or less sudden stoppage of kidney excretion must necessarily result in the damming back of it and its rapid accumulation in the blood and tissues, where, as Sir William Roberts[7] suggests, it would probably first collect in a state of solution as the quadriurate, which would then be precipitated in

[2] Croonian Lectures on Uric Acid, Gravel, and Gout, 1892.
[3] Wiener Klinische Wochenschrift, 1895, p. 787.
[4] Charité Annalen, 1895, xx., p. 215.
[5] Zeitschrift für Klinische Medicin, 1896, Band xxix., p. 5.0.
[6] Die Natur und Behandlung der Gicht, 1882.
[7] Loc. cit., p. 118.

the tissues as the gelatinous biurate, and this in its turn would be changed into the crystalline biurate.

It is on the second class of experiments that Ebstein depends for his assumption that the neutral sodium urate is capable of acting as a chemical irritant to the tissues and of producing in them the necrotising changes which subsequently lead to complete necrosis of the affected areas of the implicated tissues. In order to show that a combination of uric acid with sodium acted as an irritant Ebstein took a saturated solution, prepared at 100° F., of uric acid in a 5 per cent. solution of sodium phosphate and injected it into the peritoneal cavity, into the kidney, into the anterior chamber of the eye, into the cartilage of the ear, and into the cornea of a rabbit. Powdered uric acid was also introduced by insufflation into the conjunctival fold of one eye. Very appreciable changes were produced in the cornea only, and it was in this structure that Ebstein studied what he considers were the irritant or toxic effects of uric acid. He found that these injections produced a modified form of inflammation in the tissues of the cornea. As a control experiment he injected into the cornea of the other eye a simple solution of sodium phosphate, or water containing calcined magnesia in suspension, neither of which produced any inflammatory changes. He therefore inferred that the inflammatory changes were set up in the cornea by the urate in solution acting as a chemical irritant.

The objection to this method of experimentation is that, in the first place, the solution of uric acid in sodium phosphate does not contain the neutral sodium urate, which is the body on which Ebstein relies for the production of the initial irritant effects leading on to the necrotising process. The solution would contain the sodium quadriurate or the biurate, or a mixture of the two. Moreover, as Sir William Roberts has pointed out, such a saturated solution would soon begin to deposit its urate in the form of the gelatinous biurate, which, infiltrating the affected area of the corneal tissue, would act as a mechanical irritant. It is therefore clear that all the corneal changes observed by Ebstein can be accounted for by the assumption that they are caused by a mechanical irritant. The experiments of Neubauer are opposed to the view that a soluble urate circulating in the blood can act as a poison or irritant and start necrosis. He found that the administration of large quantities of uric acid to rabbits (as much as twelve grammes in some cases) did not seem to cause any inconvenience. Moreover, is it likely that solutions of urates should act as irritants when their passage through the kidneys is part of the natural elimination of nitrogen in man? If solutions of the urates are to be regarded as irritants then the kidneys would never escape damage. Another important argument which militates against the acceptance of Ebstein's theory is that not only is there no proof that the neutral sodium urate, upon which he depends for the starting of the gouty changes, ever exists in the human body, but, on the other hand, there is strong evidence to show that it never can exist in the human body. The neutral sodium urate is an extremely caustic and unstable body, and is decomposed in the presence of carbonates, so that it is impossible for it to exist in the blood. The first factor upon which Ebstein relies for his theory of the causation of gout therefore disappears. Moreover, the responsibility for the assumed necrotic changes cannot be transferred from the neutral sodium urate to the biurate, since Pfeiffer has shown, by means of subcutaneous injections of a solution of a biurate, that although it can produce pain and irritation, yet it cannot cause necrosis, especially when in so weak a solution as must occur in the human body. The assumption by Ebstein, that the process of necrosis generates an acid, which is supposed by him to convert the neutral urate into the acid urate, is based on an imperfect acquaintance with the chemistry of the urates. Sir William Roberts has shown that uric acid is primarily taken up by the blood and lymph as a quadriurate, not as a neutral urate, and he has also proved that the formation and deposition of the crystalline biurate are not favoured by the intervention of an acid. Moreover, in connexion with leucocythæmia, severe anæmia, and other diseases to which reference will be made later, we know that a considerable quantity of uric acid may be present in the blood without giving rise to necrosis of tissues anywhere.

Ebstein considers that by dissolving out the crystalline urates from tissues in which they are deposited he is able to demonstrate the existence of necrosis in the sites previously occupied by the uratic deposit, and insists that the crystalline urates are only deposited in tissues that have undergone necrotising and necrotic changes. This, however, is opposed to the experience of such competent observers as Sir Alfred Garrod, Sir William Roberts, Sir Dyce Duckworth, and Cornil and Ranvier. I have also frequently examined sections of cartilages containing uratic deposits which have not shown any necrosis at the sites of the deposits and in which the cartilage appeared to be practically uninjured. The changes that may be seen in cartilages containing a dense deposit of sodium biurate are quite intelligible on the assumption that they are caused in part by the mechanical pressure of the crystals, and in part by the inflammation and subsequent degeneration set up by the presence of the crystalline deposit. If the sodium biurate is only formed and deposited in necrosed areas, how is it that crystals of sodium biurate are occasionally found free in the synovial fluid of a gouty joint? As Sir William Roberts[8] remarks: "It will scarcely be contended that necrotising and necrotic processes can take place in synovia!"

Sir Dyce Duckworth[9] in a modified sense believes that a soluble urate may act as an irritant. Although he considers that gout is primarily due to a disorder of the nervous system, he entertains the additional view that the urate in solution may set up degeneration and necrotic changes in tissues. This view is expressed as follows: "It can hardly be doubted that lesions result from the action of uric acid in solution in the tissues, and that thus both acute and chronic inflammatory changes may be set up without the direct influence of uratic deposit as an alleged irritant in joints and in certain viscera, notably in the kidneys. Degenerative changes and necrosis also appear to be thus induced."

II. *Inflammatory or degenerative changes in the affected tissues regarded as the primary cause of gout, such initial changes not being caused by urates.*—Dr. Ord in 1872 considered that gout was due to a special form of degeneration in some of the fibroid tissues, resulting in an excessive formation of sodium urate, which is then discharged into the blood, and is subsequently deposited in those parts least freely supplied with vascular and lymphatic structures. Dr. Ord, whose views in this particular have been supported by Dr. Norman Moore and Mr. Bowlby, also considers that uratic deposits only occur in tissues which have previously begun to degenerate. Dr. Berkart[10] considers that the severity of the local symptoms attending an attack of acute gout are inconsistent with the assumption that they are produced by a primary chondritis, due to irritation set up by the deposition of sodium biurate in the articular cartilages. He considers that the *rôle* of the uric acid is one of a humbler kind than that which has hitherto been attributed to it. In his opinion the uratic deposits are most frequently connected with a form of panarthritis which chiefly affects the smaller joints of the extremities. Without assuming any identity between arthritis deformans and gout, he considers that in both instances the disease probably originates in some kind of atrophy of the substance of the bone, that the degenerative process then attacks the cartilages and fibrous tissues of the joints, and that following on this there occurs a necrosis of the tissues close to or within the joint. This necrosis he considers is the primary cause of the pain, hyperæmia, collateral œdema, and desquamation of the skin of the affected joint. The degeneration and necrosis of the tissues are the result of a profound disturbance of nutrition. Dr. Berkart attributes the presence of the urates in the blood in part to leucocytosis and in part to the formation of uric acid from the disintegration of the tissues; so that he regards the uratic deposits as an epiphenomenon, and not as the cause of the gouty paroxysm.

3. NERVOUS DISTURBANCE REGARDED AS THE PRIMARY CAUSE OF GOUT.

The view that gout is intimately connected with disturbances of the nervous system has many supporters. Cullen, the great opponent of the humoral theory in the latter half of the last century, considered that gout mainly depended on an affection of the nervous centres. Sir Dyce Duckworth,[11] while accepting the view, as previously mentioned, that uric acid has some connexion with gout, considers that gout is primarily dependent on a functional disorder of a definite tract of the nervous system, and that the part specially involved is possibly situated in the medulla oblongata, where it may be that there is a trophic centre for the joints. One reason that Sir Dyce Duckworth gives for considering this possible is the relationship of gout to diabetes,

[8] Loc. cit., p. 117.
[9] A Treatise on Gout, 1889, p. 53.
[10] Brit. Med. Jour., 1895, vol. i.
[11] Loc. cit.

the consideration of which has led him to the belief that the portions of the nervous system involved in the two diseases cannot be far apart from one another. In consequence of this disorder of the neuro-trophic system defects of nutrition arise, which not only cause undue formation of uric acid, but also inhibit the normal destruction of that body in the tissues; at the same time the renal excretory power for uric acid appears to be temporarily inhibited as part of the process of the gouty paroxysm. Sir Dyce Duckworth therefore regards gout as belonging to the class of neuro-humoral diseases, but he does not at present insist on the localisation of the primary disturbance in a limited portion of the cerebro-spinal axis. He draws the following distinction between inherited and acquired gout. In primary, or inherited, gout the toxæmia is dependent on the inherited gouty neurosis. In secondary, or acquired, gout the toxæmia arises from the digestive and excretory organs becoming overloaded, and then, if with this toxæmia there are depression and exhaustion of the nervous system the gouty neurosis may be established by the morbid blood condition affecting the nutrition of the nervous system. Sir Dyce Duckworth claims that the suddenness with which an acute attack of gout comes on, preceded as it usually is by a sense of well-being in the patient, is indicative of the nervous origin of the outbreak, and that it is to the instability and undue sensitiveness of the nervous system in the gouty that the manifestations of the paroxysm are due.

Dr. Edward Liveing[12] considers that there is much to be said in support of the view that gout is the manifestation of a disorder which has its primary seat in the nervous system. He remarks that the view that the uric acid exerts a toxic influence upon the nervous centres and that the particular character of the disorder is determined by the territory involved is one that presents real obstacles, on account of the limited operation attributed to a cause so general in its nature.

Dr. P. W. Latham[13] regards some change in the nervous system as the most important factor in the etiology of gout. He thinks that such change is localised in the medulla oblongata, or in the spinal cord, or in both, and that this nervous disorder may be either hereditary or acquired. He argues that if a portion of the medulla oblongata involving some of the roots of the vagus be the part affected, the metabolism of the liver may be interfered with, and so lead to the formation of uric acid. He also considers that if from any cause uric acid is circulating in the blood it would act as a poison upon any weak spot in the nervous system, and that it is intelligible that it might act upon portions of the spinal cord, which control the nutrition of the joints, and so cause nutritive changes or inflammation in the joints connected with that portion of the cord. In consequence of the inflammation or nutritive changes in the joints sodium biurate becomes deposited in them, or in the tissues around the affected joints. Dr. Latham explains the phenomena of a gouty paroxysm by direct stimulation of sensory nerves by uric acid. He considers that the gout associated with chronic lead-poisoning may be explained by the lead acting in such cases more particularly on those portions of the spinal cord which are concerned in gout.

Dr. Ralfe held the view that the accumulation of uric acid in the blood in gout was due to non-conversion into urea of the uric acid normally formed in the tissues, and he considered that the conditions which prevent the normal destruction of uric acid in the tissues depend probably on disturbance of innervation.

From a careful consideration of these various views as to the primary cause of gout I am of opinion that the greatest mass of evidence is in favour of the view that a compound of uric acid is the *materies morbi*.

The next question to consider is whether the excess of uric acid in the blood in gout is the result of deficient excretion, of over-production, or of deficient destruction. All observers are agreed that an abnormal quantity of uric acid is found in the blood in gout. This overcharging of the blood with uric acid must be due to one or more of the following causes: (1) normal production and deficient excretion of uric acid; (2) over-production and normal excretion of uric acid; and (3) diminished destruction of uric acid by imperfect oxidation or by some other means.

This last theory may be dismissed at once. There is no proof that the process of oxidation destroys uric acid; on the contrary, there is proof that uric acid is produced by a process of oxidation. Moreover, not only is there no proof that uric acid is produced during health in the organs and tissues of the body generally and that it subsequently undergoes more or less destruction, but there are good reasons for believing that uric acid is in health only formed in the kidneys and never appears in the general circulation except under pathological conditions.

With regard to the second theory—of over-production and normal excretion of uric acid—there is abundant experimental proof to show that an increased production of uric acid does not lead to gout so long as the kidneys remain in a normal condition. For instance, in connexion with diseases such as leucocythæmia and severe anæmia there is an over-production of uric acid, but no development of gout. In these diseases the excessive quantity of uric acid produced is readily excreted by the kidneys, as is shown by the large amounts of uric acid that may be found in the urine. In addition, gout is essentially a disease of middle age, and is only very exceptionally met with in childhood and in youth, although the formation of uric acid is greatest in early life, and apparently diminishes with the advance of age.

View that deficient excretion of uric acid is connected with gout.—There are many facts to support the view that gout is due to deficient elimination of the uric acid normally produced, and to subsequent absorption of this uric acid from the kidneys in consequence of that deficient excretion. That there is a deficient excretion of uric acid in gout is, I think, justified by the following facts. Judging as far as is possible by averages, recent accurate estimations of the excretion of uric acid show that in gouty subjects there is a decrease in its daily excretion as compared with healthy individuals. Pfeiffer[14] compares the quantities of uric acid contained in the urine of gouty patients at various ages and in whom the complaint had not yet become chronic with the quantities contained in the urine of healthy subjects at the same age. For purposes of comparison the quantities of uric acid found by him were calculated in grammes per 100 kilogrammes of the body weight. His results are given in the following table:—

Age.	Gouty subject.	Healthy subject.
30 to 40 years	0·885 grm.	0·965 grm.
40 to 50 ,, ...	0·818 ,,	0·882 ,,
50 to 60 ,, ...	0·701 ,,	—
60 to 70 ,, ...	0·661 ,,	0·752 ,,

This table indicates that the amounts of uric acid excreted by gouty subjects were always rather lower than the quantities excreted by healthy persons of the same age.

In the following table (Table I.) are the results of the daily determinations that I made for eight successive days respectively of the total uric acid excretion in the urine of three persons—viz.: (*a*) a male patient suffering from an attack of sub-acute gout supervening on chronic gout; (*b*) a male patient suffering from chronic gout and lead poisoning, with recent pain in the right metatarso-phalangeal joint and in both ankle-joints; (*c*) a healthy man. The quantities of uric acid in the three cases are given in grammes and are calculated per 100 kilogrammes of the body weight. All the individuals were between forty and fifty years of age.

TABLE I.—*Showing the Daily Elimination of Uric Acid in* (a) *a Case of Sub-acute Gout*; (b) *a Case of Chronic Gout and Plumbism*; (c) *a Healthy Person. Quantities of Uric Acid given in Grammes per 100 Kilogrammes of the Body Weight. All the individuals between Forty and Fifty Years of Age.*

Sub-acute Gout.	Chronic Gout.	Healthy Subject.
0·260 grm.	0·578 grm.	1·105 grms.
0·263 ,,	0·617 ,,	1·027 ,,
0·315 ,,	0·665 ,,	1·020 ,,
0·350 ,,	0·715 ,,	1·376 ,,
0·442 ,,	0·443 ,,	1·175 ,,
0·456 ,,	0·372 ,,	1·030 ,,
0·506 ,,	0·593 ,,	1·252 ,,
0·494 ,,	0·594 ,,	1·203 ,,
0·398 ,, (average)	0·572 ,, (average)	1·148 ,, (average)

[12] On Megrim and Sick Headache, 1873, pp. 404-5.

[13] Croonian Lectures, THE LANCET, April 3rd, 10th, 17th, and 24th, and May 1st, 1886.

[14] Berliner Klinische Wochenschrift, 1892, p. 413.

These results, I think, justify the view that deficient excretion of uric acid occurs in connection with gout. I shall have occasion in a subsequent lecture to discuss in detail the probable *rôle* taken by the kidneys in the production of uric acid, and in the development of gout.

Estimation of uric acid in urine.—One of the lines of investigation that I have pursued required that a very large number of estimations of the total amount of uric acid excreted in the urine per diem should be made. The process that I have employed throughout is the Gowland Hopkins method, which I consider is a very accurate and reliable process. I have had a very considerable practical experience of the various methods that have been employed for the estimation of uric acid in the urine, including Heintze's process, Haycraft's process, Fokker's process, Salkowski's process, and Ludwig's modification of Salkowski's process. In connexion with all these processes there are faults or objections from which the Gowland Hopkins process is free. As this method is not employed to the extent that, I believe, it deserves to be, I will briefly describe the process as given by Gowland Hopkins.[15] This process depends upon the fact that when urine is saturated with ammonium chloride all the uric acid is precipitated as an ammonium urate. From the ammonium urate the uric acid is set free and the amount of it is determined by titration with a standard solution of potassium permanganate. One great advantage of this process is that there is no danger of the reduction of the ammonium urate as there is of the silver urate produced in some of the other processes; moreover, the ammonium urate is easy to filter and permits of the liberation of its uric acid with great readiness. Another great advantage of the process is that although xanthin is at first precipitated along with the ammonium urate, yet the subsequent treatment with hydrochloric acid entirely removes it, so that finally it is not estimated along with the uric acid. The details of the process are as follows.

The Gowland Hopkins method for the estimation of uric acid in urine.—To 100 c.c. of the urine powdered ammonium chloride is added till practical saturation is obtained. About thirty grammes of ammonium chloride, as a rule, are required. When a small quantity remains undissolved after brisk stirring for a few minutes saturation is sufficiently complete. The urine is then allowed to stand for two hours, during which time, if possible, it is occasionally stirred to promote subsidence, and is then filtered through thin filter-paper and washed three or four times with a saturated solution of ammonium chloride. The filtrate should remain perfectly clear and bright. The precipitated ammonium urate is then washed off the filter into a small beaker with a jet of hot distilled water, and is heated just to boiling with an excess of hydrochloric acid. The beaker and its contents are allowed to stand in the cold for two hours, when the uric acid separates out completely, and is then collected on a filter and washed with cold distilled water. The filtrate should be measured before the washing is begun, and one milligramme added to the final result for each 15 c.c. of filtrate present—this need never be more than from 20 to 30 c.c. The uric acid is then washed off the filter with hot water, warmed with sodium carbonate till dissolved, and made up with water to 100 c.c. The liquid is then transferred to a flask, 20 c.c. of strong pure sulphuric acid are added, and the mixture is immediately and while warm titrated with one-twentieth normal potassium permanganate solution. The latter should be added slowly towards the end of the reaction, the close of which is marked by the first appearance of a pink colour, which is permanent for an appreciable interval. Previously the disappearance of the colour is instantaneous. The permanganate solution is made by dissolving 1·578 grammes of pure potassium permanganate in a litre of distilled water—1 c.c. = 0·00375 gramme of uric acid.

Estimation of uric acid in blood.—Another line of investigation that I have pursued has involved the examination of the blood of man and of several of the lower animals for the presence of uric acid. Quantitative determinations of uric acid in blood have been made within the last few years by Salkowski and Leube, von Jaksch, and Klemperer. Salkowski and Leube[16] slowly added the fluid blood to ten times its volume of boiling water, boiled for ten minutes, allowed to subside, filtered, and evaporated down to the volume of the original blood used. The uric acid was then determined in this liquid by the Salkowski method. Von Jaksch[17] diluted the blood (using from 100 to 300 c.c.) with from three to four times its volume of water on the water bath, and when coagulation commenced acetic acid was added so as to produce weak acidity; the mixture was then heated in the water bath for from 15 to 20 minutes till the albumin settled, and was then filtered and the sediment extracted and washed with hot water. The filtrate was further acidified with acetic acid, boiled, cooled, filtered, and sodium phosphate added. The Salkowski-Ludwig method for the estimation of uric acid was then employed. Klemperer[18] diluted the blood with from six to eight times its volume of water, removed the albumin by von Seegen's method, and then estimated the uric acid by the Salkowski-Ludwig process.

In order to test the accuracy of the different methods for the estimation of uric acid in blood a quantity of fresh bullock's blood—which I proved to be free from uric acid—was taken, and to it a known percentage of uric acid was added. I then experimentally tried on different batches of this blood the various methods that have just been described. I obtained, however, such very erroneous and discordant results that I was forced to the conclusion that no reliable process had as yet been devised for the estimation of uric acid in blood. I therefore endeavoured to devise a process that would yield reliable results. After performing a very large number of experiments, into the details of which it is unnecessary to go, I arrived at the following process, which constitutes the most reliable one for the estimation of uric acid in the blood with which I am acquainted.

Process for the estimation of uric acid in the blood.—The fresh blood is allowed to flow direct into its own volume of rectified spirit containing 2 per cent. of formalin, with which it is thoroughly agitated; the mixture is then evaporated on the water bath until the mass can be reduced to a coarse powder, which is dried in the water oven and afterwards finely powdered. The admixture of the blood with the spirit precipitates the albuminous matters in a granular form, so that when dried the blood can be reduced with ease to a fine powder; the presence of the formalin prevents any decomposition of the blood in the event of its not being convenient to work it at once to the solid state. For the experimental work one part of the dried blood was taken as being equal to five parts of liquid blood. For the extraction and estimation of uric acid in the blood from 50 to 100 grammes of the powdered blood should, if possible, be taken. In all my analyses of the blood of animals and birds I employed 100 grammes of the dried blood, and in my analyses of human blood I used 50 grammes of dried blood. The method that I employed was to mix 100 grammes of the powdered blood with a litre of boiling distilled water and to allow the mixture to boil for half an hour, during which time it was frequently agitated. It was then filtered, firstly through glass-wool and afterwards through filter-paper, and evaporated down to 50 c.c.; this liquid was filtered, allowed to cool, and then submitted to the Gowland Hopkins process for the estimation of uric acid. On adding known quantities of uric acid to different specimens of blood—which I had previously proved to be free from uric acid—and then submitting them to this process I was able to extract from 80 to 87 per cent. of the uric acid, but I could never get the whole of the uric acid out of the blood residue. I tried various solvents in place of the distilled water, such as dilute solutions of sodium acetate, potassium acetate, sodium phosphate, borax, sodium carbonate, &c., in the hope of being able to extract all the uric acid from the blood, but I was unable to find any solvent that acted better than the distilled water. This process that I have just described is the one that I have employed, in conjunction with the murexide test, in all the examinations of the various kinds of blood for uric acid to which I shall subsequently refer.

Admitting that an excess of uric acid in the blood and that its deposition therefrom in cartilages and other tissues is the direct exciting cause of a gouty paroxysm, the two questions that naturally arise in the mind are: (1) Where is the uric acid formed? and (2) How is the uric acid formed? I believe that uric acid is formed in connexion with some diseases—notably blood diseases accompanied by leucocytosis—in a different manner to that in which it is produced in health, and also in different organs. I also hold the opinion that the source of the uric acid contained in the blood in gout is the same as that from which the uric acid eliminated

[15] Proceedings of the Royal Society, 1892, vol. lii., p. 93; Journal of Pathology and Bacteriology, 1893, vol. i., p. 451.

[16] Die Lehre vom Harn, p. 94.

[17] Ueber die Klinische Bedeutung von Harnsäure und Xanthinbasen im Blut, 1891.

[18] Deutsche Medicinische Wochenschrift, 1895, xxi., p. 655.

in the urine in health is derived. I propose, therefore, to first consider the various views as to the seat or seats of formation of uric acid in health and in gout.

SEAT OR SEATS OF FORMATION OF URIC ACID IN HEALTH AND IN GOUT.

View that the kidneys form as well as excrete uric acid.—Until 1847 it was supposed that uric acid was formed in the kidneys themselves, as up to that time none had ever been detected in the blood. In that year Sir Alfred Garrod showed the presence of uric acid in the blood of gouty subjects, which discovery led to the conclusion that uric acid was formed in certain other organs and tissues of the body, and was merely eliminated by the kidneys. The view that then arose was that the uric acid eliminated in the urine originated in the system by the metabolism of the nitrogenised tissues, and was then thrown out by the kidneys. Sir Alfred Garrod[19] originally held this view, but in later years he came to the conclusion that uric acid is produced by the direct action of the kidneys from urea and other nitrogenised bodies contained in the blood. From the experimental evidence that he has put forward Sir Alfred Garrod[20] concludes that the presence of uric acid in the blood, provided it is not introduced *viâ* the alimentary canal, must be accounted for by absorption into the blood from the kidneys after its formation in these organs, the salt being changed by the blood from ammonium urate to sodium urate. He therefore concludes that uric acid is normally formed in the kidneys, and that when present in the blood it is a result of its having been absorbed after formation in other organs. Kolisch[21] regards the kidneys as the most important of the uric acid forming organs. Dr. Latham considers that the final formation of uric acid takes place in the kidneys, where it is produced by the conjugation of substances manufactured in the liver and conveyed in the blood to the kidneys. The following experimental evidence has been put forward in support of the view that uric acid is formed in the kidneys. Zalesky experimented on serpents, who eliminate all their urinary nitrogen as uric acid. He found that after the removal of the kidneys of serpents they lived about as long a time as when the ureters were tied, and that after death no uratic deposits were found in any of the tissues. As he found after ligaturing the ureters of other serpents that uratic deposits were to be seen after death in most of the organs and tissues, he concluded that the kidneys were the producers as well as the eliminators of uric acid. The following experiments also are strongly opposed to the view that the kidneys, with regard to uric acid, merely act as filters which separate the uric acid brought to them in the blood. Sir Alfred Garrod[22] gave from fifteen to thirty grains of potassium urate daily and similar daily doses of sodium urate without producing any increase of uric acid in the urine. Wöhler and Frerichs found that the administration of potassium and sodium urates increased the amount of urea, but did not augment the quantity of uric acid in the urine. Neubauer found that the administration of large quantities of uric acid to rabbits, either by the stomach or by injection into the veins, was followed by a corresponding increase in the excretion of urea, but no uric acid was discovered in the urine.

View that the liver and spleen produce uric acid.—The view that the liver was the seat of the production of uric acid probably originated in the knowledge that the excretion of uric acid in the urine is most abundant during digestion, when the liver is most active. This view is, however, equally compatible with the idea that the liver merely produces the antecedents of uric acid, which subsequently become conjugated in the kidneys. The investigations of Schröder and Minkowski apparently were strongly in favour of the view that uric acid was formed in the liver. Schröder[23] states that the liver of birds contains a high percentage of uric acid, and that after removal of the kidneys uric acid continues to be formed and accumulates in the liver and blood. The last mentioned statement is utterly opposed to the results of Zalesky's experiments on the extirpation of the kidneys of serpents. Moreover, if the liver of birds contained uric acid, and if it passed thence to the kidneys, it must be present in the blood. As I shall shortly show, the blood of birds is quite free from uric acid. Minkowski[24] succeeded in keeping geese alive from six to twenty hours after extirpation of the liver. After the operation their urinary excrement contained only from 2 to 3 per cent. of uric acid, instead of the normal 60 or 70 per cent. These results are, however, equally compatible with the view that the liver is the seat of production of the antecedents of uric acid.

Dr. Murchison regarded the liver as the seat of production of uric acid, and the presence of the latter in the blood or tissues as the result of functional derangement of the liver, as the result of which the metabolism of some of the albumin is arrested at the stage of uric acid formation instead of going on to the complete stage of urea formation. Charcot regarded the liver as the principal seat of production of uric acid. He considered that a functional derangement of the liver caused the production of excessive quantities of uric acid and its consequent accumulation in the blood. Meissner regards the liver of fowls in the normal condition as the principal source of uric acid, but considers that the spleen and the nervous tissues share in the formation. Ranke was of opinion that his experiments led to the conclusion that the spleen was the principal organ concerned in the production of uric acid. It has, however, never been possible to show that the spleen takes any active part in developing gout. On the contrary, the large amount of uric acid found in the blood in cases of leucocythæmia and severe anæmia show that an exaggerated production of uric acid does not by itself exert any influence on the origin of gout.

Views that uric acid is produced in various tissues.—Ebstein, who attributes in cases of gout the main production of uric acid to the muscles and bone-marrow of the affected extremities, admits, however, that the kidneys may take a part not only in the secretion, but also in the manufacture of uric acid. Robins was the first to formulate the view that uric acid is formed in connective tissues generally, and that the pathological condition is merely an exaggeration of the physiological one. This view, therefore, regards normal fibrous tissue as the seat of production of uric acid, and considers that in gout this production is increased. Chrzonszczewsky also concludes that uric acid arises in connective tissue, and that it is conducted thence through the lymphatic vessels. Cantani considers that the connective tissues take an active part in the formation of uric acid, and that in cases of gout it is especially produced in the cartilages and peri-articular tissues (ligaments, tendons, &c.). Senator also inclines to the opinion that at least part of the uric acid is formed in cartilaginous tissue. Most writers and observers on the subject, however, consider that it is only certain that uric acid deposits in substances of the connective tissue class, and that there is no proof that uric acid is formed in connective tissue. Dr. Haig claims that, in addition to the formation of uric acid in the animal economy, the introduction of small quantities of uric acid in the food leads to its gradual accumulation, and that consequently very large amounts may be stored in the body without any excessive formation having taken place. Dr. Haig, however, does not produce any proof that uric acid is stored up in the system apart from gout. The contrary is proved by the fact that in diseases such as leucocythæmia, severe anæmia, &c., although large quantities of uric acid are formed, yet they are readily eliminated without being stored in the system.

It will be evident that if the various views as to the formation of uric acid in the liver, spleen, connective tissues, muscles, and bone-marrow be correct, then it must be conveyed in the blood in order to be excreted by the kidneys. We know that some 400 to 500 grains of urea are normally excreted in the urine, and that this urea is conveyed in the blood from various organs to the kidneys, where it is excreted; but in addition from eight to ten grains of uric acid are daily excreted in the urine of man. The question is, Does this uric acid come as such to the kidneys? In other words, Is it produced in any of the organs or tissues of the body generally and conveyed in the blood to the kidneys, to be by them excreted; or is it produced in the kidneys and then turned into the urine? The answers to these questions will depend very much upon our ascertaining whether uric acid exists in the blood of man in health, and whether it exists in the blood of those animals, such as birds, the whole of whose nitrogenous urinary excrement consists of a compound of uric acid.

[19] Transactions of the Royal Medical and Chirurgical Society, 1848, p. 35.

[20] Proceedings of the Royal Society, 1893, pp. 482-484.

[21] Wiener Klinische Wochenschrift, 1895, viii., p. 787.

[22] Lumleian Lectures: THE LANCET, March 24th, April 7th and 21st, 1883.

[23] Ludwig's Festschrift, 1887, p. 89.

[24] Archiv für Experimentelle Pathologie und Pharmakologie, Band xxi.

Does uric acid exist in the blood of man in health?—Sir Alfred Garrod,[25] as the result of his investigations, declares that in absolute health the uric acid in the blood is inappreciable, that in gout the blood is very rich in it, and that uric acid is found in smaller but appreciable quantities in individuals who are developing a gouty condition, or who are under the poisonous influence of lead. Von Jaksch[26] examined the blood of several healthy individuals, but found no uric acid present. Klemperer[27] also was unable to find any uric acid in the blood of healthy persons. I have also carefully examined the blood of healthy subjects by the process previously described and have been unable to find any uric acid present.

Does uric acid exist in the blood of mammals other than man?—Sir Alfred Garrod[28] examined the blood of the ox, sheep, and pig by the uric acid thread test, but could never find a trace of uric acid present. I have also examined the blood of the ox and sheep, working on very large quantities of blood by the process I have described, but I have never found any uric acid present.

Does uric acid exist in the blood of birds and reptiles which eliminate all their urinary nitrogen as a compound of uric acid?—Sir Alfred Garrod[29] examined the blood of the turkey, fowl, pigeon, and duck by the uric acid thread test, but never found a trace of uric acid present. I considered that these observations of Sir Alfred Garrod as to the absence of uric acid from the blood of birds were of so great importance, in view of the opinion which I strongly entertain that uric acid in health is only formed in the kidneys, that I thought it desirable to repeat the experiments. I accordingly worked on very large quantities of the blood of the turkey, goose, duck, and fowl. After the most careful examination I have never been able to detect any uric acid in the blood of these birds, and I therefore confirm Sir A. Garrod's observations. I am also able to confirm his observations as to the presence of urea in the blood of birds. I found urea present in the blood of all the birds that I examined—viz., the turkey, goose, duck, and fowl. Dr. John Davy examined the blood of two snakes (*viper communis*) for uric acid, but failed to detect any.

This mass of experimental evidence, which shows that uric acid is never present in the blood of human beings in health, and also that it is never present in the blood of birds and serpents although their urinary excretion is almost entirely composed of a compound of uric acid, conclusively supports the view advanced by Sir Alfred Garrod and held by Dr. Latham, and in a modified sense by Kolisch, that uric acid is normally produced in the kidneys. How is it possible in all these cases that uric acid could be absent from the blood if the view be correct that uric acid is formed in the system generally and is conveyed in the blood to the kidneys, which play, as it were, merely the part of a filter in the removal of the uric acid from the blood? I consider that the evidence brought forward renders such a view impossible.

[25] Lumleian Lectures, 1883, loc. cit.
[26] Deutsche Medicinische Wochenschrift, 1890, xxxiii., p. 741.
[27] Loc. cit. [28] Loc. cit.
[29] Lumleian Lectures, 1883, loc. cit.

SEAMEN'S HOSPITAL SOCIETY.—The annual court of the Seamen's Hospital Society was held on Feb. 25th at the Royal United Service Institution, Whitehall, Earl Spencer being in the chair. The report showed that the society had had under its care during the last twelve months 2616 in-patients and 16,906 out-patients, being in the aggregate the largest number ever treated by the society in one year. The year's income was £15,533 and the expenditure £16,315. The Queen had forwarded her annual subscription of 100 guineas as usual, which made a total of 6000 guineas since the beginning of Her Majesty's reign. The adoption of the report was moved by the Japanese Minister and seconded by Admiral Boys.

WESTERN DISPENSARY.—The report presented at the annual meeting of the Western Dispensary, Rochester-row, Westminster, showed that the gratuitous patients were somewhat fewer last year than during the previous year, which was perhaps partly accounted for by the continued demolition of houses occupied by the poorer classes. The provident branch of the dispensary, however, showed a considerable increase; in 1896 it had 4557 members, the number of visits paid was 14,359, and the payments amounted to £630. Dr. Allchin moved the adoption of the report of the Marie Celeste Convalescent Branch.

The Milroy Lectures

ON

QUARANTINE.

Delivered at the Royal College of Physicians of London on March 11th, 16th, and 18th, 1897.

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LECTURE III.[1]

Delivered on March 18th.

MR. PRESIDENT AND GENTLEMEN,—In my last lecture I endeavoured to show that the theory on which the system of modern quarantine was based was untenable, and that in practice it had failed to confer any real protection on those countries which practised it. I have now to deal with the practical objection—namely:—

3. *That an effective quarantine is practically impossible in a commercial country.*—In early days, when trade was relatively of small volume, this was apparent, and the enormous growth of commerce has simply emphasised the fact. The question could only be considered at the present day with reference to the period of incubation, and it would obviously be accepted that any vessel was safe if there had been no case of disease during a period at least equal to that of the possible latency of the disease. Sir John Simon, in his eighth report, says: "For the purpose of the argument we assume that an allowance of ten days will cover the time during which infection can be latent or designedly concealed, which, however, is less than the time on which quarantine Governments insist, and I believe only half the time of an average quarantine in Greece; and if we translate into practical language what this would mean if England had quarantine against the Continent it would be that ten days would be the minimum time in which any person, sick or healthy, could enter England from the Continent—that, for instance, our present ninety minutes between Calais Pier and the Dover railway-station would become an affair of at least ten days, and that no national advantage from quarantine could be promised if this rule were in any case relaxed or evaded."

Again, nearly thirty years later, when our shores were once more threatened with cholera and when various sanitary authorities and other bodies were urging the Government to abandon their traditional attitude and impose a period of detention upon all arrivals from infected countries, Dr. Thorne Thorne, in his Report of 1892-93, thus sums up the absurdity and impracticability of the suggestion: "'Put all ships from infected ports into quarantine' was one demand. Let us apply this to a few only of our ports. Between the end of September, 1892, and January, 1893, there occurred in Calais some seventy attacks of cholera, of which twenty-four terminated fatally. The port of Calais was thus an infected port. Between Sept. 24th and Dec. 14th, 1892, cholera was prevalent in Boulogne, causing thirty deaths. The port of Boulogne was thus an infected port. Now, in the six weeks ending Nov. 12th, 1892, the mean weekly number of passengers arriving at Dover from the port of Calais was 1800, and if a quarantine of five days had been imposed upon arrivals from this infected port the total number of persons who would have had to be detained, housed, fed, and otherwise cared for, either afloat or on shore, by the Dover Sanitary Authority would, apart from the crews of the vessels, have amounted to 10,894, the number under detention at any one time ranging from 1019 to 1723. Dealing with Folkestone in the same way, it appears that during the six weeks ending Nov. 12th, 1892, the total number of passengers arriving from the infected port of Boulogne was 3251, that the mean weekly number of persons who at one time would have had to be detained at Folkestone under a five days' quarantine would have ranged from 272 to 673; and, owing to cholera at other ports, such as Dieppe

[1] Lectures I. and II. appeared in THE LANCET of March 13th and 20th respectively.

and Havre, similar measures would have had to be carried out at other English ports, notably at Newhaven and Southampton. Apart, indeed, from an almost complete cessation of traffic between the ports concerned, such as might have been brought about by any real attempt at quarantine restrictions, the result obtained would have been one which could only have brought ridicule upon our sanitary administration." Dr. Thorne Thorne further remarks: "Obviously such a system would break down at its first application, unless exemptions were made which would at once destroy the value of the attempt to impose a quarantine on arrival from any one port, such as were demanded in the case of Hamburg." He points out that "this would be absolutely futile and would merely involve vexatious expense and delay to passengers, who would travel by rail from the port in question and take ship at other places against which there were no restrictions." Indeed, as a matter of fact many persons at that time, fearing detention, did arrive in England from Hamburg, having embarked at Dutch, Belgian, and even French ports.

It is scarcely possible for those not personally interested in shipping to realise how serious a matter quarantine has been for shipowners, not only in the remote past, but even at a very recent date. Firstly in importance would come, without doubt, the loss occasioned by delay and uncertainty of detention, and even in some cases actual prohibition of intercourse with infected ports or ports supposed to be infected. Dr. Bowring, after extended travel and experience of quarantine, says that the "pecuniary loss inflicted by the system may be estimated by millions of pounds sterling in delays, demurrage, loss of interest, deterioration of merchandise, increased expenses, fluctuations of markets, and other calculable elements; but the sacrifice of happiness, the weariness, the wasted time, the annoyance, the sufferings inflicted by quarantine legislation—these admit of no calculations, they exceed all measure." It seems impossible that trade could ever have been carried on under the vexatious and harassing restrictions at one time in force; obviously trade as understood at the present day could not have existed. Thus, so recently as 1827 all vessels bound up the River Thames from ports east of Gibraltar were compelled to run into the Medway and perform quarantine in Stangate Creek. Such a waste of time and money would be utterly impossible at the present day.

Apart from the detention which was an essential part of the system there existed the greatest uncertainty at all times as to the existence of the disease which rendered such detention compulsory; the merest rumour or suspicion of disease was often held sufficient to justify imposition of the most rigorous quarantine, and this must of necessity have been the case. Even at the present time, with all the facilities that now exist of postal and telegraphic arrangements, it is always difficult to obtain accurate information as to the existence and nature of diseases prevailing in foreign countries. The policy of concealment is constantly adopted in order to avoid the actual or imaginary interference with trade which may follow the declaration of the presence of an epidemic, and the officially confirmed facts are obtainable only after the disease has spread to such an extent that its existence can no longer be denied. First cases of cholera are called "sporadic" or the term "cholerine" is used, with the hope that they may not become sufficiently numerous to call for investigation on the part of other countries. This is, indeed, a strong argument against such restrictive measures as interference with the carrying on of trade. It not only leads to concealment, in itself a great danger, but further, on account of the desire to keep the true facts secret, prevents the authorities from taking due measures to prevent the spread of infection. On account of the delay in obtaining accurate information action must be taken by other countries in self defence on mere rumour, otherwise sufficient time would elapse for vessels to reach a country before the port of departure was authoritatively known to be infected. And the same danger arises at the close of an epidemic, it being found necessary to continue restrictive precautions for a certain (or rather an uncertain) period after all danger is officially declared to be at an end. Egypt in 1865 had prepared an elaborate system of quarantine for all pilgrims returning from Mecca, but the disease was not recognised before many vessels had arrived and Alexandria had been infected by their means. "Next, before Alexandria confessed itself infected it had infected Marseilles and France generally. Then before Marseilles confessed itself infected Valencia had received a most disastrous infection from or through it; Odessa before it was recognised as itself having cases of cholera had let infection pass through it, first to start in Podolia an epidemic which diffused widely in South Russia, and secondly to start at Altenburg, in the middle of Germany, an epidemic which diffused widely in Central Europe. Italy received its infection through the quarantine establishment at Ancona, which both infected the town of Ancona by sending infected things to be washed there and also allowed an undiscovered case of cholera to pass on from its lazaret after six days' detention to infect the town of Pisa."[2]

Further instances of the futility of relying upon official reports of infection are given in Mr. Netten Radcliffe's Report on Cholera in Europe in 1873. The first intimation of the presence of cholera in St. Petersburg was received on Sept. 9th, the disease having appeared there on Aug. 9th. Cholera was officially recognised in Havre on Sept. 2nd, the disease having been present there since Aug. 9th, and after a formal contradiction of the presence of the disease on Aug. 29th. The first intimation of cholera in Hamburg was received on Aug. 5th, after inquiry made in this country in consequence of several cases of cholera having been landed at Blackwall from a ship which had sailed from Hamburg on July 26th. Cholera had been present in that port since June 21st. Information was received of cholera in Rotterdam on Oct. 18th, but its existence there was not officially declared by the local authorities till Oct. 27th. Information was received of the presence of cholera in Antwerp on Oct. 25th, and at that date clean bills of health were still being issued to ships leaving the port. Again, in 1892, at Hamburg, the first official intimation of the outbreak of cholera was received on Aug. 23rd, though it was subsequently ascertained that 447 cases had occurred, with 121 deaths, previously to that date, and the first cases from that port had arrived at Grangemouth on the 19th.

A somewhat similar danger still obtains with reference to cargoes such as rags, clothing, &c., considered as capable of conveying infection, and this danger appears to be fatal to the policy recently in vogue in this country of issuing Orders for limited periods prohibiting the importation of such goods unless previously disinfected. The immediate result of such Orders has been to seriously interfere with a special class of traffic for a certain period. Assuming that such materials do carry infection—and the evidence is by no means clear on this point—it must be remembered that although shipped at a certain port they are not necessarily produced or collected within the immediate neighbourhood. Thus rags might be introduced into this country from an infected district without any precautionary measures, because they were shipped from a country not declared infected; or, on the other hand, materials sent from an infected port might have been obtained from a district where no disease had appeared. Again, no Orders were issued until the disease was well established, and therefore these goods might be freely imported from an infected district up to the time of the promulgation of the Order. Further, one effect of such an Order is necessarily to increase the cost of the material owing to the compulsory disinfection. The traffic would, therefore, to a certain extent (varying according to the state of the market and the laws of supply and demand) be arrested, and stocks would be accumulated in the infected countries. As soon as the epidemic was at an end and the prohibitory Order revoked these stocks would be shipped, and thus the very goods collected in the infected country during the prevalence of disease, and detained for a certain time, would be once more freely admitted. If these goods were capable of conveying infection it would be far more reasonable to insist upon their disinfection at all times. If this were a settled principle arrangements would be made whereby they could be disinfected at small cost and the intermittent dislocation of trade avoided.

The impossibility of a strict quarantine in the present day, as well as its failure, are well shown by the history of the attempt to carry it out in the United States in 1892. A vessel coming from Hamburg, carrying immigrants, arrived at New York, having had twenty-two deaths from cholera during the voyage. A minimum quarantine of twenty days was thereupon imposed upon all vessels carrying immigrants. This soon led to a total cessation of the emigrant trade, but in the meantime a large number of persons (some thousands) were

[2] Mr. Simon: Report to Privy Council and Local Government Board, 1875.

detained under conditions which were described in the daily press as "inhuman and revolting." The quarantine was only partly carried out, as it was soon found to be impracticable, while at the same time unhappily the disease found its way into the city, where sixteen persons were attacked, with twelve deaths.

As instances of the imposition of quarantine without due cause, Milroy quotes the case of vessels from Great Britain being quarantined at Messina in consequence of a report in a French newspaper of a case of typhus having occurred at Glasgow, while a cargo of cotton from New Orleans which had been landed and re-shipped at Liverpool had been declared infected after a subsequent voyage of more than fourteen days' duration. In 1858 a P. and O. steamer in Alexandria landed some passengers at Gibraltar, and before leaving it was necessary to obtain a bill of health. This was sent on board in a tarred box, fastened. The captain, not aware of any risk, opened the box, and in consequence on arrival at Malta had to undergo a quarantine for ten days for communicating with an infected port. At Alexandria a vessel arrived with pilgrims from Tunis; one died on the voyage, and after some controversy it was decided to consider the disease as plague. The pilgrims were landed in a lazaret, where another died. Again there was some conflict as to the nature of the disease, but the majority of the authorities considered it as plague. One of the medical men had touched the corpse, and had gone home without undergoing the prescribed purification. This became known to the foreign consuls, who communicated the facts to their respective Governments, with the result that Alexandria was declared to be infected with plague. In the report of the proceedings of the Quarantine Committee of the Social Science Association it was shown that all arrivals from Egypt and Turkey, without exception, had been subjected at nearly every port in the Mediterranean to a more or less lengthy and strict quarantine, although it was well known that no plague had been seen in those countries for twenty years. Again, arrivals from the West Indies, Gulf of Mexico, and the West Coast of Africa are always quarantined in Spain and Portugal, whether or no yellow fever exists in those countries.

The records of quarantine in our own country reveal some extraordinary facts. In a Parliamentary return prepared in 1853 it is stated that in 1848 sixteen vessels were detained for periods varying from three to six days on arrival from Hamburg, although there had been no sickness on board during the voyage, on arrival, or while in quarantine. In 1754 the sloop *Fowey*, from Algiers, arrived at Gibraltar with a clean bill of health, having had no sickness on board during the voyage. Here she rode out six days' quarantine and left for Portland, and arrived after a month's voyage, during which all were well on board. The captain and crew all went on shore, and some persons from Weymouth went on board. She then sailed to Guernsey and received free pratique, but after twenty-four hours all the crew were ordered on board and the vessel was directed to perform quarantine at the Motherbank. There she remained with all her crew in perfect health for four months, when, without any reason being assigned, she was taken out to sea by one of Her Majesty's cruisers and sunk off Start Point. In 1731 two vessels from Cyprus, having cotton and other goods on board, were burned by order of the Privy Council at an expense of £29.935, although there had been no sickness on board. Cases have constantly occurred when a healthy vessel has been quarantined because she has come from an infected, and in some cases even from a non-infected, port, although the port of arrival was itself infected at the time. In 1838 the *Firefly*, from Beyrout, arrived at Alexandria with a bill of health stating that there had been no plague at the former place for a period of thirty-six days. She was nevertheless compelled to undergo a quarantine of twenty-two days, although the disease was prevailing at Alexandria at the time. In 1801 two vessels from Mogador, with cargoes of hides, suspected of carrying the infection of plague, were sunk at the Nore at a cost of £15,000, although all on board were known to be in good health. Indeed, so recently as 1846 Dr. A. White, Inspector of Military Hospitals and Superintendent of Plague District in Corfu, in "A Treatise on Plague, with Hints on Quarantine," says: "I am aware that the expurgation of a plague ship with a cargo of goods is a very difficult, tedious, and expensive operation, as well as one not free from danger. I am, nevertheless, of an opinion that, generally speaking, it will be the best, and perhaps the cheapest way in the end, to destroy ship and cargo at once and to place the people under strict quarantine until their state of health is proved to be free from all infection."

To keep up quarantine, with all its elaborate machinery of medical officers, lazarets, quarantine-guards, &c., involved enormous expense. Even in this country, where no proper lazarets existed and where the system in its entirety was never thoroughly carried out, the cost was considerable. As I previously mentioned, the charges to the shipowners were very heavy, frequently amounting to 35 per cent. of the value of the cargo; while to the country during the years 1801-1823 inclusive the cost amounted to £641.000 (London £158.000 and the outports £483.000), or an average of £18.000 a year. In 1734 the total expenses were £17,849; in 1829, £23.000; and 1826, £26.000. During the years 1840-1850 they averaged £10,800 a year. All this vast machinery of defence had to be maintained in working order if it were to be suddenly brought into use. Lazarets, fully equipped with all the necessary officers, attendants, and guards, could not be provided suddenly, but were of necessity kept in readiness for an emergency which might rarely occur and only at long intervals of time. Hence the expense was continuous, though the actual need for the use was but occasional. For although all vessels from certain countries were detained, this was done with the object of arresting disease arising from those which were actually unhealthy, the quarantine being a probation to establish the fact of infection or otherwise. According to returns between the year 1720 and 1843 (123 years) only twenty-five vessels with plague actually on board arrived at all the ports of France and Italy—ten of these at Marseilles, five at Venice nine at Leghorn, and one at Genoa. Those at Marseilles were in the years 1741, 1760, 1784, 1785, 1786 (two), 1796, 1819, 1825, and 1837. The total number of cases, including all doubtful ones, at this latter port was only thirty-two, with eighteen deaths. For these few cases the two countries were put to an enormous outlay, and the vessels arriving there subjected to serious and vexatious delay with its attendant heavy expense.

The most serious objection to quarantine, however, apart from its futility, is the actual danger to health which it involves from the detention of a large number of vessels under conditions in most cases insanitary, and in all more or less unfavourable to the preservation of health on board an infected vessel or in confined lazarets within range of the infection if such exist. For either there is no necessity for their quarantine or they are unreasonably kept more or less exposed to the risk of infection, which is unjustifiable. The case of H.M.S. *Eclair*, in 1845, affords an unfortunate example of the danger to the crew of an infected vessel from the imposition of quarantine. This vessel, on arrival, was first sent to the Motherbank, but on account of the difficulty of communication during bad weather she was sent to Stangate Creek, admittedly one of the most bleak and sickly places on the whole coast of Kent, and this in spite of the strongly worded advice of Sir John Richardson that the sick should be landed and conveyed to Haslar Hospital. In consequence of this action they were confined to the foul atmosphere of the vessel, with the result that over 200 of the crew who had hitherto escaped fell sick and died. This case attracted so much attention that the term of quarantine was considerably shortened. Dr. Gregson, in writing of quarantines, says: "From their oppressive and partial operations they have, instead of diminishing, propagated the disease. Hundreds have been sacrificed by being torn from their homes and thrust into crowded, overcharged, and tainted lazarettes. To sum up, in countries where quarantine has been strictly enforced disease has been imported; in others where quarantine has been loosely carried out disease, though it has appeared before, has been absent for long periods; while in some countries where there was no quarantine the disease has occasionally presented itself."

But, unfortunately, the maintenance of the system extended its pernicious influence much further. It engendered in the minds of the inhabitants of those countries which maintained it a false feeling of confidence for which there was no foundation, and which led them, believing themselves sufficiently protected against the importation of disease, to neglect those measures of sanitation which alone are of any avail against the spread of infection. It is a matter of history that in those countries where quarantine has been most rigorously carried out there common-sense precautions against disease have been most disregarded and the general principles of national hygiene

most neglected. The reasons are not far to seek. They feel they have done what is necessary to protect themselves, and cannot therefore realise the value of sanitary measures of rational sanitation which are so essential for the health of the country. Dr. Farr, in his Report on the Cholera of 1866, says: "Quarantine absorbs all the attention of the authorities and serves as an excuse for the neglect of extensive hygienic measures of water-supply and purification." Dr. Thorne Thorne, C.B., in his presidential address to the Epidemiological Society in 1887, says: "The beneficial results which have ensued in regard to the saving of life from cholera have in no small measure been due to the fortunate abandonment by this country of all endeavours to keep cholera away from her shores by a system of quarantine. I recently brought under the notice of the Epidemiological Society the attitude that we have finally adopted in this matter. It is one of distinct opposition to the entanglement of this country by means of a delusive system offered anew, under the plea that another reduction should be effected in the duration of a detention which even under its most stringent forms had been mainly characterised by ever repeated failure. The system of quarantine has again and again shown itself powerless for good, and being so its vexations and inhuman characteristics stand out the more prominently. Above all, it has a blighting effect upon sanitary progress. So long as Governments tell their peoples that a line shall be drawn around them across which disease shall not pass, so long will those peoples be reluctant to spend their money on the promotion of true measures of prevention. The quarantining countries are essentially those which cholera invades. Taken as a group they are those where the sanitary progress is at its lowest ebb; and with the experience we have before us I would, in conclusion, ask, Is it likely that this nation will sacrifice her well-tried system of prevention for a restriction of five days' quarantine?"

4. *Sanitation and a rational system of medical inspection have proved more efficacious and less burdensome.*—The large sums expended by this country in carrying out works of sewerage and water-supply and in public health administration have not been wasted. If quarantine had succeeded in preventing the entrance of those diseases against which it was directed, its beneficial results would have stopped there; whereas the expenditure on sanitary works has not only enabled us to cope with these same diseases in a more thorough and rational way, but has been instrumental at the same time in greatly improving the general state of health of the community. The public mind has been educated to the necessity for sanitary improvement and the important part which it must play in protecting the people from the ravages of disease. All attempts to conceal or minimise outbreaks of infectious disease have been avoided, and the means adopted for coping with them are as widely made known as possible. An attempt is made, and to a great extent happily successful, to intercept by means of medical inspection at the ports all cases of imported disease. Where this attempt fails reliance is placed upon the sanitary condition of the district to which the infection may be conveyed. If the sanitary condition of such district be good, its system of drainage and sewerage satisfactory, and its water-supply pure and abundant, then experience confirms the theory that there is but little to fear from a spread of the disease, and that it may reasonably be expected to be confined within narrow limits. At the present day it is not necessary to enlarge upon the importance of measures of sanitation, this being fully realised, though still but imperfectly carried out. As far back as 1821 Dr. Hancock, in his work, "Researches into the Laws and Phenomena of Pestilence," thus alluded to the subject:—"It must surely be manifest that foreign contagion, now actually considered the substantial germ without which the most fearful combination of indigenous causes—famine, filth, misery, corrupt food, vitiated air, and sickly seasons—can never produce a pestilence, dwindles in national importance almost to a shadow on comparison. And it can scarcely be doubted that the attempt to defend ourselves by quarantine regulations while such causes existed would be like binding in chains a ferocious animal at a distance when another ten times more fierce was fondled at our doors and suffered to roam about at pleasure." The Report of the General Board of Health in 1849, quoting Russel of Aleppo, who lived there while the plague raged for three years, says: "The city of Aleppo, though in unrestricted and constant communication with Egypt and other ports of the Turkish Empire where the plague appeared annually, used to be affected on an average only once in eighteen years." The unknown influence which they called an epidemic atmosphere was also reckoned by the ancients to be an inevitable forerunner or concomitant of spreading sickness. "In their judgment half the cause, at least one blade of the destroying shears, is forged at home, and without it the other cannot do the work of fate."

Unfortunately in most countries where quarantine is practised the restrictions have been so severe that the interests of commerce have trained for their own purpose a band of mercenary officials and an elaborate system of bribery and corruption. This has been encouraged by the fact that in several cases the formality has been found utterly impossible, as for instance on the visit of a sovereign or ambassador of a foreign Power. In such instances the detention was perforce dispensed with, and the rule once broken through it is not difficult to see how in other cases the desire to avoid delay and expense led to the purchase, direct or indirect, of a like privilege, until in some countries the system was eventually practically reduced to one of blackmail. Those who paid best received the most attention, and the supposed protection by probation became an absolute fiction. In the case of one European State the system had become so oppressive and withal so corrupt that it was fitly described as "a system of tyranny, tempered by 'baksheesh.'" Dr. Brown, of the United States Army—after showing that yellow fever does not originate in the States, but is brought by vessels from foreign ports, and giving the case of Natchez, which was not visited by yellow fever before steamboats began running on the Mississippi in 1819, but after that year was attacked whenever the disease prevailed in New Orleans, and never at any other time: also that of Vidalia, where yellow fever never appeared before 1843, when steamboats first called there; and again that of Sabine and Matagorda, which had coast-wise trade, and were never attacked until the severity of the blockade at Galveston and the possession of New Orleans by the Northern forces made them convenient for blockade runners—says: "New York established a rigid quarantine in 1882, and although it has been brought every year to the port it has only twice appeared within the quarantine lines, in each being plainly traced to evasion of the quarantine law." I should here point out that this example of the effect of quarantine in arresting yellow fever is in itself no argument in favour of quarantine simply, inasmuch as the American system involves the complete disinfection of the vessel itself, a measure which is indispensable in dealing with this disease. He further states that Philadelphia was exempt for fifty years, except in 1853, when the barque *Mandarin* was improperly allowed to pass. These were simply instances, then, of the impossibility of preserving an absolutely efficient system. Dr. Choppin of Louisiana[3] says: "No conditional quarantine can ever be made effective, because of the laxity with which laws are, unfortunately, executed in this country; and, secondly, because of the cupidity of commercial interests at stake, which will always move heaven and earth to evade successfully all quarantine laws and regulations." The latter statement will apply with equal force to any other country. While it is not right to condemn a system because of the abuses which have crept in, still these have been so constantly associated with quarantine that they have with a certain amount of reason at last come to be considered as an inseparable part of it. Before the Select Committee of the House of Commons which sat in 1824 evidence was given by merchants to the effect that foul bills of health were deliberately and without any justification issued so that a market could be made in Holland while British vessels would be delayed here, the issue of such bills being arranged by the Greek merchants at such times as the state of the markets rendered it desirable in their interests to forestall British vessels. Again, for political purposes quarantine had been made use of with effective results. At one time during an insurrection in Sicily it was stated on good authority that a quarantine of eighty days was imposed upon certain vessels bringing help to the rebels, during which interval the rising was successfully dealt with.

It is evident that some reasonable system of safeguarding a country from the importation of diseases is not only desirable, but even essential to its welfare; and that, apart from its fallacies, its dangers, and actual cruelties, quarantine at the present day is impossible—i.e., that no country can submit to a system which, while affording no real protection, would by its paralysis of trade lead to poverty and

[3] Medical Times and Gazette, 1873, vol. i.

misery, which would in turn produce conditions favourable to diseases tenfold more terrible than those it was assumed to be a protection against. The true defence against epidemics is a healthy condition of the people, fostered by all the care and attention that can be given to it by our legislators and sanitary authorities, and it is upon this that England in the main relies. The Public Health Act, in addition to ordinary sanitary powers, provides for the isolation and treatment of infectious sick and the disinfection of houses and clothing; while the Notification Act compels the fact of such disease being reported to the sanitary authority whose duty it is to put these preventive provisions in force. As the ordinary zymotic diseases—such as diphtheria, enteric, typhus, and scarlet fevers, and small-pox—are always in our midst to a greater or less extent, and as the existing powers of sanitary authorities are deemed ample to cope with them here, it is clearly logical to believe that they would be sufficient to combat any cases of the same disease brought by vessels to our shores. But this is not at present the view taken by many authorities in this country. Because such cases happen to be on board a vessel, instead of arising within our own limits, it is suggested that such ship should be submitted to a course of detention and isolation which in the case of a house has scarcely ever been thought of. The compulsory notification, removal to hospital, and subsequent disinfection are ample to ensure safety; and there is no more justification for the detention of healthy persons on board a ship on which a case of small-pox has occurred than there is for the enforced isolation of the inmates of a house in which the same disease has appeared. Yet in the one instance the question has never been discussed, at least in this country, while the other has had many strong advocates.

With reference to those diseases which do not ordinarily, or but rarely, exist in this country, more stringent measures may justifiably be employed, though these must be of such a nature as not to interfere unnecessarily with the interests of intercourse. The term "medical inspection" as employed in this country means that in each port a medical officer of health is engaged, whose duty it is to visit each ship on which any case of cholera, yellow fever, or plague is suspected to exist, the suspicion or fact to be derived from the master of the vessel (except when a surgeon is carried) or a custom-house officer. This is surely a misuse of the term. If medical inspection means anything, it implies that a medical officer visits every vessel from "foreign" ports and examines every case of sickness whatever its nature, and every person on board if the vessel has arrived from a port which is known to be infected. This is a system which, while in no way interfering with trade, affords the utmost protection which is possible or even desirable. The isolation of the sick and the disinfection of the vessel follow exactly the same lines as those employed on shore, varying only as the nature of the infection requires this or that treatment for its destruction. This is not advocating any novel experiment or the use of untried measures. During the last twenty-five years there has been ample experience of what may fairly be called the English system, and its value has been sufficiently demonstrated to justify future reliance upon it. To deal only with the last outbreak of cholera on the Continent in 1892-93, during the months of August, September, and October, 1892, while the cholera was raging in the city of Hamburg free and unrestricted intercourse was carried on between that port and this country. Although no fewer than thirty-five cases of cholera were introduced into our ports during that period (eleven of which proved fatal), in no single instance was there any spread of the disease beyond the persons arriving infected. These thirty-five cases were brought by twenty vessels, from four different ports, fourteen coming from Hamburg. All but seven of the thirty-five cases were arrested on arrival by the sanitary authorities of the nine ports at which they arrived, while in three instances only was the disease not recognised until the patients had reached their destination inland. These seven patients were isolated in hospital, and the usual precautions taken.

Realising the fact that the trade interests, nay the very existence, of the Empire would be imperilled by any return to the absolute system which has failed whenever tried, the Government will still depend for safety upon a rational system of medical inspection at the ports as the first line of defence, and upon the maintenance at an increasingly high standard of sanitation throughout the length and breadth of the land for the second line of defence in the event of the first line being broken through. At the last International Conference many of the European Powers were inclined to follow the same lines, but unhappily this has not been a lasting Convention. While I write these lines a new Conference of the European States is meeting to discuss the measures to be taken to prevent the importation of plague, and it is generally believed, and not without some solid foundation for the belief, that some of those countries which have previously agreed to abandon quarantine will, under the influence of what is little else than panic, again revert to a system which has deluded them in the past, and will doubtless again fail them in the future. England is likely to be the only country there represented which will be found willing to continue her present system without modification or alteration. It is somewhat difficult to ascertain definitely the varying views of foreign countries on the question, or to estimate fully the effect upon their action of the Dresden Convention. This Convention was signed by Great Britain, Germany, Austria-Hungary, Belgium, France, Italy, Russia, Switzerland, Luxemburg, Montenegro, and the Netherlands. Some idea of the extent to which this Convention influences these and other Powers in dealing with plague may be gathered from the following notifications made officially through their Governments. On Oct. 13th, 1896, a quarantine of ten days was imposed by Turkey on all arrivals from Bombay. On the same date the Spanish Government notified the imposition of quarantine on all vessels which had left Bombay after Sept. 18th; Calcutta was added on Oct. 27th. On Oct. 29th the quarantine board at Cairo issued an order compelling disinfection of all vessels bound from Bombay to Suakim. On Nov. 3rd twenty-one days' quarantine from the date of starting was imposed upon all vessels arriving at Bussora or other Turkish ports from Bombay. On Nov. 13th Malta (a British possession) imposed a quarantine of twenty-one days upon all vessels on which cases of plague or suspected plague had occurred, and on the 19th another order was issued requiring all vessels from Bombay to proceed to the quarantine harbour and there land all luggage, clothing, and cargo for disinfection; while on Feb. 1st a quarantine of twenty-one days, with landing and disinfection, was ordered. On Dec. 4th Cyprus imposed a quarantine of ten days at Larnaca on all arrivals from Bombay. On Jan. 5th, 1897, Natal imposed a quarantine of twelve days after disinfection on arrivals from Bombay. On Jan. 5th Constantinople notified ten days' quarantine on arrivals from Kurrachee and rigorous disinfection. On Jan. 29th the sanitary board at Tangiers decided to refuse admission to arrivals from India with foul bills of health. On Feb. 1st Gibraltar announced that vessels from India would not be allowed pratique. On the same day Lisbon notified that all vessels from India would be subjected to rigorous disinfection, and passengers and crews placed in strict quarantine. Tunis refuses communication with all vessels from India for coaling or otherwise. On Feb. 4th Holland declared ten days' quarantine on arrivals from Bombay and Kurrachee; while on the same date all arrivals from India were refused admittance into Morocco. On Feb. 8th the port of Constanza was closed by Roumania to all vessels from Indian ports. On Feb. 12th the French Government decreed that passengers arriving from infected ports could only enter at Pauillac, St. Nazaire, Havre, or Dunkerque, and that before landing they should be subjected to an observation of eight days at Pauillac and St. Nazaire, and four days at the other ports, and that all their baggage should be disinfected.[4]

The sanitary condition of our vessels must always be a most important question, though unfortunately it has not hitherto received the attention that it deserves from a public health point of view. Ships travelling to all parts of the globe are obviously exposed to the danger of infection from the diseases of any port in which they may happen to lie. Sailors when in port, as a rule, frequent the

[4] The International Conference has decided that persons arriving on board ship with plague are to be immediately landed and isolated; the rest of those on board to be subjected to a surveillance not exceeding ten days, counting from the development of the last case; passengers' personal effects, luggage generally, and goods or cargo to be disinfected; the bilge water shall be removed before the general disinfection of the ship. Suspected vessels shall be subjected to a simple medical visit, but the passengers' personal effects and those of the crew will have in every case to be disinfected. Special measures will be taken by each Government for the ships conveying emigrants or found to be in bad hygienic condition. Ships declining to undergo such measures will have to land their passengers and goods. The former as well as the latter will have to undergo the regulation measures, after which the ships may continue their voyage.—THE LANCET, March 13th, 1897, p. 763.

lower quarters of the town, and are therefore at each port exposed to a fresh risk of infection. Thus their chance of becoming infected is greater and more varied than that of the corresponding class on shore. In the case of merchant ships the majority of seamen are during the voyage beyond the reach of medical aid, and therefore, for the sake of humanity alone, their surroundings should be made as hygienic as possible under the circumstances. The calling of the seaman would appear at the first sight to be a healthy one, as he spends a large part of his time in the open air removed from the close and confined atmosphere of towns, and undoubtedly he has many advantages; on the other hand, he suffers from frequent exposure to wet and cold, and hence is unduly subject to various forms of rheumatism. From the limited air space and the fact that, owing to the system of watches, forecastles are always occupied, and therefore never thoroughly ventilated, all forms of lung disease are exceedingly common. These causes and the violent exertions that sailors are called upon at times suddenly to undergo fully account for their high mortality and sickness-rate. In the Royal Navy the death-rate in 1892 was 5·58 per 1000, while in 1886 in the merchant navy for sailing ships the rate was 21 and for steamships 9·6. Although during the last twenty-five years great improvements have taken place and much more attention has been paid to naval hygiene, it is still a fact that so far as sanitation is concerned the sailor is a long way behind his fellow worker on land. He is entirely dependent for food on the vessel in which he lives, and provided a scale which is given him on engagement is adhered to there is no law to require that such scale should be either reasonable or sufficient. As a matter of fact the majority of diet scales in use in our merchant service are not sufficiently nutritious or varied for men doing hard work, nor, indeed, are they by any means the best that can be provided for the money that is expended upon them. Better dietaries and better cooking are urgently needed. A larger amount of cubic space than that compelled by law (viz., 72 cubic feet per head) is absolutely required, and what, perhaps, is more necessary some guarantee that such space should be properly utilised and fitted for the purpose which it is intended to serve. At the present time there is a grave anomaly with reference to this question. Before a house can be erected a plan showing the drainage and sanitary arrangements must be submitted to the sanitary authority, with whom rests the responsibility of approving or otherwise; while in the case of a vessel no such provision obtains. As a general rule in designing a vessel a certain space is set aside for the crew, and when she is completed this space is utilised in the best way possible by an artisan without reference to a sanitary authority and without any control, except that exercised by the Board of Trade under the limited (from a sanitary point of view) powers of the Merchant Shipping Act. The arrangement and fitting of crews' quarters under the supervision of a sanitary authority, advised by an expert, would be a benefit both to owners and seamen, and would be of great value in preserving the health of those on board. The constant and close supervision of vessels while lying in the port, and the prompt abatement of all nuisances and conditions likely to prove injurious to health, is essential. Milroy, in his "Quarantine as it Ought to Be," specially lays down that vessels in a filthy and unwholesome state from foul bilges or otherwise should not be allowed (sickness or no) to enter a crowded port, or to lie alongside a wharf, or to land cargo till they have been cleaned out and ventilated. A foul ship is itself more to be dreaded than anything she may have on board. The United States Government has always laid great stress upon the sanitary condition of vessels leaving foreign ports for their shores. They require a bill of health with actual information as to the health of the vessel on leaving. Rohe quotes as an illustration of the value of this system, from a report by the medical officer of the Marine Hospital at Naples, that eight vessels left that port during the year 1893 when cholera was epidemic, these vessels being under similar conditions as to water-supply and food and carrying passengers of similar class and origin. In four leaving without any sanitary conditions there were 50, 90, 84, and 230 deaths respectively. In the four leaving for the United States on which sanitary precautions were carried out no sickness occurred.

From a public health point of view it is thus clear that the sanitary condition of our mercantile marine is a matter of the utmost importance, not only to ship-owners and masters, but to every inhabitant of this country. Upon it we have to rely as a definite part of our system of defence against the importation of epidemic disease, a part which is at least as essential as medical inspection or the maintenance of the sanitary condition of our population on shore. If this be once realised it will probably lead to increased attention being paid to the health and surroundings of our seamen, which is urgently needed if Great Britain is to continue to occupy her present proud position among the great commercial countries of the world.

ILLUSTRATIVE CASES OF APHASIA.

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(*Continued from* p. 801.)

CASE 2. *Complete word-blindness; right-sided homonymous lateral hemianopsia; no agraphia, but inability to read own writing; optical aphasia; temporary mind-blindness; the ability to spell correctly completely retained.*—The next case, which came under my notice several years ago, is an excellent example of word-blindness without agraphia and of temporary mind-blindness. It was closely observed for four years and presents many points of interest and importance. Although there was no post-mortem examination, there can, I think, be little doubt that the lesion was either a hæmorrhage or softening situated in the back part of the left hemisphere, on what I may term the peripheral side of the visual speech centre (angular gyrus), that is to say, between the half-vision centre and the angular gyrus. The fact that the power of writing and perfect ability to spell were retained seems to show conclusively that the visual speech centre itself (the angular gyrus) was not implicated and destroyed by the lesion; while the complete word-blindness and the very remarkable condition of mind-blindness (which persisted for many months) probably show that the lesion was situated above (on the higher cerebral side, so to speak) of the half-vision centre. Occlusion of the left posterior cerebral artery, with softening of the left half-vision centre, will produce (as in the case to which I have already referred[1]) right-sided homonymous lateral hemianopsia, but does not produce word-blindness, and it is doubtful if a purely destructive lesion in this situation will produce mind-blindness, though an irritative lesion involving the half-vision centre might perhaps do so. For the production of word-blindness the lesion must interrupt or destroy the fibres which pass from both half-vision centres to the left angular gyrus (visual speech centre), or must involve the visual speech centre itself. In the latter case—i.e., when the visual speech centre itself is destroyed—there is always, according to Déjerine, agraphia as well as word-blindness. In this case there was no agraphia; the patient could write quite well, but was unable to read a word of what she had written. In short, the case was an example of cortical or, as Déjerine terms it, pure or isolated word-blindness. The hemianopsia, which was absolute from the date of the lesion up to the time of the patient's death, was no doubt due to destruction of the optic radiations of Graticlet in the occipital lobe. The mind-blindness was probably an irritative phenomenon, due to the irritation produced around the softening, rather than a destructive or paralytic symptom. The date at which it occurred and the complete way in which it cleared up and passed off are, I think, in favour of this view. But I admit there may well be difference of opinion on this point, for the disappearance of this symptom (mind-blindness) might, if it were a paralytic symptom due to the destruction produced by the lesion, be explained by a process of compensation being established. I am, however, disposed to favour the irritative rather than the paralytic theory, and to think that irritation passing from the back part of the left hemisphere

[1] See THE LANCET, March 20th, 1897, p. 796; and Atlas of Clinical Medicine, vol. ii., p. 40.

along fibres passing from the visual centres[2] in both hemispheres to associated cortical centres is the more likely explanation of the mind-blindness and mental alterations which were present in this case. While this condition of mind-blindness was at its height the patient was unable to recognise her surroundings, and she could not recognise by the sense of sight her own daughter, the nurse who attended on her, &c., though she was able to recognise them by the aid of other senses—e.g., the sense of hearing. But, further, the patient did not recognise her own identity—she thought she was a boy, a servant, &c. It is interesting, therefore, to note that a state of mental derangement which to the patient's friends appeared to be a condition of insanity was the result of a purely local brain lesion—i.e., hæmorrhage or softening. Such a condition of mental derangement seems to me to favour the irritative rather than the paralytic theory In addition to the mind-blindness a condition of optical aphasia (*l'aphasie optique*, as the French writers term it) was present. The patient could not name objects which were shown to her. Another point of interest is the fact that although the patient was completely word-blind—unable to read the simplest words or letters—her ability to spell was so perfectly preserved that the members of her family were in the habit of referring to her on any doubtful point of spelling. In the observation of future cases of word-blindness the patient's ability to spell should, I think, be carefully tested. No doubt in most persons both the auditory word-centre and the visual word-centre are brought into action in the process of spelling, though in most persons the action of the auditory speech centre is in all probability by far the more important of the two. Whether some persons are able to spell by the aid of the visual speech centre alone is one of the disputed points connected with the subject of aphasia. According to Déjerine, the action of the three great speech centres (the auditory speech centre, the visual speech centre, and the motor vocal speech centre)—he does not admit the existence of a separate and independent writing speech centre—which comprise what he terms the "zone of language" are mutually dependent; derangement of one necessarily, he thinks, entails derangement of the others. In this he is opposed to the teaching of the late Professor Charcot and his pupils. The subject is exhaustively discussed by Dr. Charles Mirallié in the important work which he has recently published.[3]

It is probable, I think, that in most persons destruction of the visual speech centre will interfere in some degree (and probably in some persons in a very marked degree) with the power of spelling correctly. If this supposition be correct, it is reasonable to conclude that in most cases of word-blindness such as this, in which the power of spelling is perfectly retained, the visual speech centre (the angular gyrus) is not the seat of the lesion. And, *vice versâ*, that in most cases of word-blindness in which the angular gyrus is destroyed (i.e., is the seat of the lesion) the power of spelling is more or less profoundly deranged. Now, if this supposition be correct, it is obvious that in cases of word-blindness the patient's ability to spell correctly or the reverse is an important clinical means of differentiating the exact seat of the lesion, whether (*a*) it involves the visual speech centre, or (*b*) the tracts proceeding to the visual speech centre from both half-vision centres. And still more, of course, in cases of word-deafness, whether the lesion involves (*a*) the auditory speech centre, or (*b*) the tracts proceeding to the auditory speech centre, since the action of the auditory speech centre is for the purpose of spelling more important than the action of the visual speech centre.

From the report of the case it will be seen that a very slight amount of paraphasia was present. This is interesting, for Déjerine states that in cases of pure word-blindness (such as this case appears to be) there is no disturbance of the motor vocal speech centre—no paraphasia. Another point which should be noted is the decided condition of incoördination which was present in the movements of the right hand. I have noted the same symptom in several other cases of word-blindness with hemianopsia in which there was no paralysis (see Case 1). The notes of the case are as follows. The patient, who up to the time of her illness was in good health, was seized four days before I saw her with severe pain in the top of the head; it lasted for about an hour. After it had passed off her relatives noticed that she was unable to express herself correctly, that she used the wrong words, &c. Next morning the patient was in a dull, apathetic condition, but she talked quite sensibly and well, making no mistakes and using the words correctly; the pupils were rather sluggish, the tongue was furred, the intestinal evacuation was very offensive, and the pulse and temperature were normal. As there seemed to be no evidence of a localised cerebral lesion, the attack was attributed to biliousness. At the time of my first examination I found the patient in bed. The temperature and pulse were normal. The tongue was slightly furred. The heart sounds were feeble, but there was no valvular disease. The liver was of normal size. The urine contained neither albumin nor sugar. The patient stated that she had no giddiness, no sickness, and no headache. There was no paralysis; the grasping power of the right hand was fully equal to that of the left. There was no disturbance of tactile sensibility. The movements of the right hand appeared to be somewhat incoördinate; the patient's daughter stated that she fumbled with her right hand and that she had difficulty in taking hold of objects (her teacup, for example) when they were placed on her right side. The mental condition was dull and apathetic, but there was no obvious derangement either of the auditory speech centre or of the motor vocal speech centre. The patient seemed to understand everything which was said to her and answered every question which I put to her quite intelligently and correctly. There was absolutely no defect in articulation, and there was, so far as I could detect, no paraphasia.[4] Her relatives stated that since the attack her memory was decidedly impaired. It will be remarked that up to this point of the examination no aphasic defect had been discovered; in fact, with the exception of some mental dulness and some incoördination in the right hand, no definite symptoms of disease, nothing indicative of the well-marked localised brain lesion which was present, had been detected. It was only when the fields of vision and the patient's power of reading were examined that the true nature of the case became apparent. The case shows the importance of examining, as a matter of routine, the fields of vision and the patient's power of reading in all cases of obscure cerebral disturbance. The pupils were equal and moderately dilated; they contracted rather sluggishly to light. The patient complained that her sight was somewhat dim. On ophthalmoscopic examination the fundi were found to be normal. On testing the fields of vision right-sided homonymous lateral hemianopsia was found to be present (see Fig. 5). On testing the patient's power of reading it was found that she was unable to read a single letter or word, but she could sign her name and write words and sentences, though somewhat imperfectly. She was, however, absolutely unable to read a single word which she had written. She also had difficulty in naming objects—for example, she could not name either a tuning-fork or a knife. At this stage of the examination she broke down and began to cry, apparently because she was distressed that she could not name the objects that were shown to her. Her daughter said that she was not naturally emotional, but that she had broken down several times in the same way during her present illness.

Subsequent progress of the case.—When I next saw the patient, a week later, the general condition was improved: the tongue was cleaner, the appetite was good, the bowels were acting regularly without medicine; the pulse was of normal frequency, and the temperature 98·6° F. There was no headache, no vomiting, and no giddiness. The patient was sleeping well. The pupils were equal and of medium size; they contracted actively to the stimulus of light, and the contraction seemed as active when the ray of light was thrown on the left (non-seeing) half as on the right (seeing) half of the retina. The right-sided homonymous lateral hemianopsia was still present. The patient could understand everything that was said to her, and answered every question which was put to her correctly and in appropriate language. Her friends said that her memory was still much impaired. She herself said that she felt "in a fog" and that "everything is a blank." She was absolutely unable to read any word, letter, or figure. She could not name a knife when it was shown to her. She could not name her own fingers when she was

[2] I do not say merely the half-vision centres in the tips of the occipital lobes, but the adjacent areas of the cortex in which the primary visual impressions received by the half-vision centres are re-represented.

[3] De l'Aphasie Sensorielle.

[4] From the subsequent reports it will be seen that a slight degree of paraphasia was occasionally present.

asked to do so. She seemed quite unable to appreciate her surroundings. Her friends stated that she did not know them and did not appear to know where she was. She signed her name when asked to do so and also wrote the numbers 2 and 8 correctly when asked to do so, but after having written her name and the figures 2 and 8 she was unable to read them. Her friends stated that she still fumbled with her right hand (had difficulty in raising a cup to her mouth with the right hand, &c.), but there was no obvious paralysis. The grasping power of the right hand was quite as good as that of the left. There was no anæsthesia in the right hand to objective tests, but the patient evidently felt that it was different in some way or other from the left. During my visit she frequently looked at the right hand, turned it about, and asked me more than once if I did not see a difference in it. Her friends stated that she would persist in saying that it was different from the left, that she was not sure that it was her own hand, that she thought it did not belong to her, &c. At this visit the patient was a little emotional both at the beginning and end of the examination, but she did not break down in the way she did at my first visit.

Condition two months after the onset of the attack.—During the last month the patient's condition had varied considerably from day to day. At times she had been very much depressed, at others bright and lively. Her appetite and general health had been good. As a rule she had slept well, but some nights she had been restless, others she had cried a good deal and been very much depressed. She was still quite unable to read. She was greatly distressed at this, and her friends said that her one desire was that she might regain the power of reading. She had been more intelligent and more sensible, but the mind-blindness still continued. She did not realise that she was in her own room or in her own house; she did not recognise her daughter who had for years been her constant companion, and who had nursed her during the whole illness. She thought the nurse was a boy; she thought she herself was a boy, a servant, &c. On one occasion she got up in the middle of the night, went out of her bedroom and wandered about the passage. When she was taken back to her bedroom (through another door) she thought she had been on a journey; she said she had gone away in the night and had come back in a boat. On another occasion, after a bad night, she said that she had been travelling—that she had been to India, to France, &c. She thought the nurse was a boy; said he was "an active little chap." On another occasion she thought her medical attendant was a visitor; she said: "He is a very big boy." After the practitioner left she was sorry and was afraid she had been rude to him. She still continued to think that her right hand did not belong to her. One morning she stated that she had lost two fingers, meaning her rings; she had placed them on her right instead of her left hand. When the rings were put on the left hand and she was asked if it was all right she said: "It is very much better now."

Three months after the onset it was noted that she had been decidedly better for the past week; she recognised her surroundings (home, &c.) for the first time a week previously. She was much more sensible and began to take interest in household affairs. She was much less emotional. She still made mistakes in naming people, but was now conscious that she made these mistakes. She told me so and said it annoyed her. On one occasion the patient told me that she failed to recognise her daughter, who had nursed her all through her illness, when she came into the room, but that she knew her by her voice immediately she began to speak; said that until she heard her voice she did not think she was one of her children. The acuity of vision after correction with suitable glasses was $\frac{6}{9}$. The hemianopsia still continued (see Fig. 5). It was absolute both for light, form, and colours; and I may take this opportunity of saying that it persisted without change until the patient's death. The word-blindness was still complete. She was unable to read a single word. The only letters of the alphabet which she recognised at this visit were "o" and "a." She said: "I see them" (the letters) "but do not seem to know what they are." She recognised pictures quite well, but could not tell the time on my watch. She said the word "of" was "ox"; read the numbers 102 and 60 correctly; said 42 was "420"; read "Edinburgh" as "400"; and could not read the word "powder," but said the individual letters were "g, c, m, n." She wrote her own name and the number 102 correctly when asked to do so. She could not name a knife when it was shown to her. When asked, "Is it a pen?" she replied "No." "Is it a knife?" "No." "Is it a button-hook?" "No" (with emphasis). "Is it a knife?" "Yes." Her condition became at this time

FIG. 5.

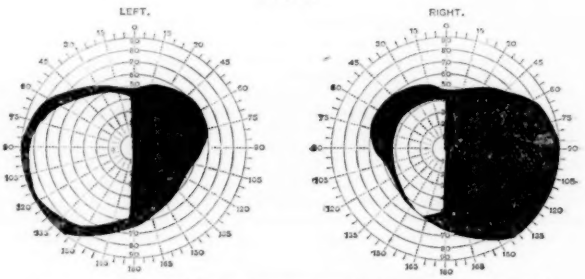

Chart of the fields of vision in this case (word-blindness and hemianopsia) taken three months after the onset of the attack.

distinctly better. She read the figures 8, 10, 50, and 54 correctly; said 102 (which she read correctly at the last visit) was "one hundred and—well, I cannot read the last." She read the words "cat" and "dog" correctly.

Four months after the onset of the attack she wrote me a letter. After writing the letter she was unable to read a word of it. Practically the only mistakes were in punctuation.

Condition a year after the attack.—The patient was at this time looking much brighter. Her friends said that she was quite clear mentally. Her daughter said that she had written several letters; they were well written, well expressed, and correct in every way, but she could not read them after she had written them. Her power of reading was, however, improving. She read the words "Her saints and kings" correctly, and named the letters in these words correctly; named all the letters in "royal" and "Edinburgh" correctly, with the exception of l and h; said l was n, but when told that she had made a mistake corrected herself. Read the number 1886 correctly. For some months after the last note the patient was in a very apathetic condition, apparently the result of an attack of influenza; on recovering from the influenza she was very much depressed, weak, and tottery; would sit for hours together with her head bent forward without speaking. Her medical attendant thought that she was going into deep dementia. The urine now contained a small quantity of pus, but was otherwise normal.

Condition eighteen months after the onset of the attack.—She was now looking very well and bright and for some time past had had no noise in the head; for some time previously she had complained much of this symptom. The urine still contained a small quantity of pus. She admitted that she felt better than she had done since her illness commenced. She answered questions sharply and brightly. Her memory was, however, still very defective for certain things; for example, she could not tell me what she had had for luncheon, or where she had been for a walk in the morning. The day before my visit, when asked what o'clock it was, she read the time on the clock without hesitation, and quite correctly. She had never been able to do so before since the onset of the attack.

Condition two years after the onset of the attack.—She remained very well all the summer. A fortnight ago she was suddenly seized, when out walking, with sickness; had to be carried home; vomited several times during the night and became very depressed, complaining bitterly of the "noise in the head," and saying more than once that there must be something in the room or house causing the noise.

Condition two and a half years after the onset of the attack.—After the last note the patient remained for several weeks in a dull, lethargic condition. She then gradually improved and for the past three months has been extremely

well, better in every respect (except reading) than since her illness commenced. She knitted and worked incessantly, but did not make any attempt to read or write. Her idea of locality seemed particularly good. Her reading power remained much *in statu quo*. On examination she was able to spell out some words, but failed to recognise some of the letters. When a word, however long, was spelt out to her, she at once knew what it was. I remarked to her daughters that her spelling seemed very good, and they immediately said that it was quite unaffected and that they were in the habit of referring to her (as they had been in the habit of doing before she was taken ill) on any doubtful point of spelling. She used to be an excellent speller and still retained her spelling power perfectly, though quite unable to read. When I tested her to-day she failed to read "a" and "not." She said that she thought she could read, but she was lazy and did not care to do so. Her eyesight was very good and her inability to recognise letters and words was not due to defective eyesight. There was no change in other respects.

Condition three years after the onset of the attack.—The patient was well all the previous summer, but became duller mentally when the short evenings and cold weather set in. She looked much the same and had not written any letters or attempted to read since the last note.

The patient died four years after the onset of the attack from acute congestion of the lungs and heart failure. There had been no material change in her condition since the last note.

Corrigenda.—Case 1, description of Fig. 1: Instead of "right-sided bilateral temporal hemianopsia," read "right-sided lateral homonymous hemianopsia."—Page 801, left-hand column, thirty-second line from the top, instead of "pure" agraphia, read "true" agraphia.

Edinburgh.

AN UNDESCRIBED SYMPTOM IN PERITONITIS.

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ASSISTANT SURGEON TO ST. THOMAS'S HOSPITAL AND TO THE ROYAL FREE HOSPITAL, ETC.

So far as I know, the symptom to which I wish to call the attention of the profession has not been described in cases of peritonitis, and must accordingly be a very rare one. There is also a probability that this symptom appears in a late stage of the disease, and indicates a very intense inflammation of the peritoneum.

On the morning of Jan. 19th, 1897, I was requested to see a patient under the care of Dr. Seward in the Colney Hatch Asylum who had developed serious abdominal symptoms. The patient was a man, aged forty-seven years, who had been an inmate of the asylum for three and a half years, suffering from chronic melancholia with a previous history of alcoholic excess. He had had good bodily health until three months before the date on which I saw him; he had then suffered from an attack of hæmatemesis of short duration, the cause of which could not be discovered. He had resumed out-door work and appeared to have been in good health until Jan. 12th, when he had another short attack of hæmatemesis. Three days after this he vomited several times and complained of abdominal pain and constipation; his temperature was 101·6° F., and this was the highest registered during his illness. Vomiting continued at intervals, but no further blood was present in the vomit; the constipation was unrelieved by enemata, the abdomen became distended, and the pain increased. During the night of the 18th the symptoms had become much worse, the vomiting had become much more frequent, and the distension and tenderness had much increased. After the despatch of the message to me a condition of collapse set in, and on my arrival the patient was in a very low state not admitting of operative interference. His condition was as follows: He was lying on his back with his limbs flexed and his head bent forward; he had a sallow, smooth, expressionless face, the eyes and mouth being unduly opened as from muscular weakness; but he was able to understand and answer questions. He was unable to protrude his tongue, which was very dry, beyond the teeth. His extremities were bluish and cold; respiration was rapid and almost entirely thoracic; the pulse was quick, weak, and very compressible. There was frequent vomiting, which was not feculent, but no passage of fæces or flatus per anum. There was considerable distension of the abdomen, a general tympanitic note on percussion, with much tenderness all over it, but no complaint of pain. This tenderness was most marked in the lower epigastric region, so much so that it caused particular attention to be drawn to the part. It was then found that in both groins, extending outwards to the superior iliac spines, was a symmetrical puffy œdema of the sub-cutaneous tissue; that the œdema was limited as regards its downward extension into the thighs by the deep layer of the superficial fascia, the attachment of which was clearly outlined, and that it passed backwards to a slight extent into the flanks. The skin was somewhat flushed in the groins, and wherever the œdematous condition passed there was excessive tenderness; the scrotum was œdematous and very tender; there was no œdema of the legs. For the last two days he had had retention of urine which was relieved by catheter; but the urine was normal and the instrument had passed easily. The condition of the patient was becoming rapidly worse, and although it was highly probable that operative treatment was required to relieve his symptoms it was evident that nothing could be done to prevent a fatal termination which was only a question of a few hours. I expressed an opinion that although the symptoms, without the œdema of the groins, indicated peritonitis, the presence of the œdema made it certain that such an inflammation was there, whatever might have been the primary disease. At the post-mortem examination made by Dr. Bryan, to whom I am indebted for the following account, the diagnosis of acute peritonitis was fully confirmed.

Necropsy.—The post-mortem examination was made seventeen hours after death. The body was found to be well nourished. With regard to the head the calvaria was normal and the dura mater was normal; the pia mater was much thickened and stripped easily; the brain substance was somewhat soft, otherwise normal. The vessels at the base were healthy. There was slight hypostatic congestion of the lungs, otherwise they were normal. The heart was healthy; there was slight atheroma of the aorta. As to the abdomen there was an unusual amount of fat, the great omentum being very fatty and the sub-peritoneal fat generally was in great excess. The large intestine from the anus to the cæcum was much distended; there was a hard mass of fæces of the size of a small orange in the cæcum just at the valve, otherwise the large intestine was empty. The appendix was normal. The small intestines were normal throughout except where a small coil dipping down into the pelvic cavity was affected by the peritonitis described below. The mucous membrane of both the large and small intestines was healthy. There was a local acute peritonitis limited above by the cæcum and the lower part of the sigmoid flexure, affecting the whole of the pelvic cavity. There were recent adhesions between the rectum and bladder and much recent lymph in the neighbourhood of the cæcum. There was much œdema of the sub-peritoneal tissue, which extended along the inguinal canals on both sides into the scrotum. No cause for the peritonitis could be discovered after a very thorough search, which included an examination of the bones of the pelvis. The liver and stomach were healthy, as were all the other abdominal organs with the exception of the right kidney, which was somewhat pale and which had an appearance of some former inflammatory affection.

Remarks.—The post-mortem examination confirmed the opinion which had been given as to the causation of the unusual condition present during life and also demonstrated the correctness of the explanation which had been offered. Some ten years ago I was called upon to perform an operation about midnight for a patient suffering from acute abdominal symptoms which had commenced when he was straining at stool at six o'clock on the same morning. His condition was very bad and it was impossible to find out what had been the state of his urinary functions before the sudden attack of pain at the time mentioned, but he had been to his work on the previous day and was not known to have been ill. When the abdomen was opened in the middle line the sub-peritoneal tissue contained such an excessive amount of fluid that the possibility of a pathological extra-peritoneal rupture of the bladder suggested itself as the most likely cause for the presence of such an amount in that situation. A sponge saturated with this fluid

was pronounced by those present to have a distinctly urinous odour. I myself was unable to express any opinion as a nasal catarrh had taken away my sense of smell. Accordingly the peritoneal cavity was not opened, but a puncture was made in the perinæum and a large catheter passed into the bladder to provide for drainage. The man lived but a few hours afterwards. At the post-mortem examination very acute purulent peritonitis, due to the giving way of a typhoid ulcer, was disclosed. It was not, therefore, a great stretch of the imagination to picture a similar inflammatory exudation as present in this patient, with an escape of some of the fluid along the inguinal canals into the groins, and to a less extent into the scrotum. The comparatively small amount of exudation into the scrotal tissues is probably accounted for by two circumstances—(1) the dorsal decubitus of the patient, and (2) the irritating effect of the fluid on the muscular tissue of the scrotum, which was wrinkled as from muscular action of the dartos, and formed a great contrast to the smoothly distended scrotum of the dropsical patient, or that of the sufferer from urinary extravasation. I have mentioned that the œdematous area was excessively tender, to touch it even lightly made the patient start far more than pressure over the abdomen above the level of the extravasation. It resembled in this respect the tenderness near the extreme edge of the advancing area in spreading gangrene.

It hardly appears necessary to point out the difference there is between this form of œdema and that due to cellulitis of the scrotum and groins having its origin in some external breach of surface; the limitation of the exudation by the deep layer of the superficial fascia will clearly differentiate the two, as it also excludes any form of dropsy. Its resemblance to extravasation of urine is much more near, but it does not pass into the perineum, and the scrotum in extravasation of urine, where the fluid is at first of a less irritating character, is very much more distended in proportion to the extent of groin extravasation; the penis is also much enlarged, and there is usually a well-marked history of stricture of the urethra, with proof of its presence, whilst there are no symptoms pointing to peritoneal inflammation. If the urethra had given way in front of or under the scrotum the swelling of the penis and scrotum would be in excess of the other portion of the swelling and the stricture signs would be evident, &c. It is very possible that this condition, although noted, has been ascribed to an exudation through the abdominal wall in consequence of the inflammation of the muscular tissue over a centre of inflammation within the abdomen. It is not unlikely that much of the œdema in cases of localised inflammation about the cæcum has followed the sub-peritoneal tissue in part, and that in an œdematous condition of the subcutaneous tissue of the groin the fluid, anticipating the closer approach to the surface of an inflammatory exudation, has really gravitated to that position after its escape from the inguinal canal in consequence of the position of the patient. To say that such a condition as that described does not occur because some observer of known skill has not noted it, recalls an observation to my mind which was made by the President of the Clinical Society at a recent meeting; this was to the effect that we could not say that a particular symptom was or was not present in any case, although we might think so, if we had not looked for it. I cannot say that this symptom was not present in the patient to whom I have alluded above, in whom the exudation of fluid into the sub-peritoneal tissue was so excessive, because my attention had not been drawn to the possibility of its occurrence and I did not look for it—indeed, the exudation of such an amount of fluid was a surprise to me, but I was informed that a similar exudation of fluid was not uncommonly found in the post-mortem room. If this is the experience of many pathologists, then it is exceedingly probable that the condition to which I have drawn attention is not so uncommon as would at first sight appear to be the case. We have not sufficient data to enable us to form an opinion as to the exact value of this sign, but it is not unlikely that it is one which indicates a more than usually bad prognosis.

Mansfield-street, W.

WILTSHIRE COUNTY COUNCIL.—The agricultural committee of the Wiltshire County Council have recommended the appointment of Mr. I. M. H. Munro, D.Sc., F.C.S., F.C.I., as district agricultural analyst for the administrative county of Wiltshire.

MEDIASTINAL SURGERY.

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THE abdominal and cerebro-spinal cavities and the organs they contain have been freely explored by the surgeon since he has adopted cleanliness with the most brilliant results. The thoracic cavity and its contents, although frequently the seat of surgical interference, have not received the same attention, and no definite lines of technique have so far been laid down. This is partly due to the fact that the thoracic walls present more mechanical difficulties to the surgeon than the abdominal, and partly to the dread with which interference with most of the thoracic organs still inspires him. Having lately met with a series of cases of intra-thoracic disease in which there arose an urgent demand for surgical interference I determined to try to ascertain whether the general cavity of the thorax must of necessity remain a *terra incognita* to the operating surgeon. Considering the subject in the post-mortem room, the advantages of the median incision—a prolongation, in fact, of the usual abdominal exploratory incision—could not but strike one. So easy is this incision of execution and so considerable is the power of exploration thereby obtained that one is almost induced to hope that future experience may justify the application to it of the term "normal thoracic incision." As a commencement of my experiments I opened some ten thoracic cavities of subjects dead from various diseases, employing, with slight variations, the following method:—1. A long skin incision from the thyroid cartilage to the ensiform cartilage. 2. Exposure by rapid dissection of the trachea down to the notch of the sternum and of the same bone in all its extent. 3. The separation of the fascia from the notch of the sternum as far outwards as the tendon of the sterno-mastoid on either side, keeping the point of the knife absolutely on the periosteum of the sternum so as to avoid injury to veins, &c. 4. The separation with the finger tip of the posterior surface of the sternum, just below the notch, from the tissues lying beneath it, these latter being displaced backwards. They consist principally of the innominate vein and artery, the trachea, and many nerve branches and plexuses. 5. An incision with the saw along the middle line of the sternum from notch to ensiform cartilage, not implicating the latter and not quite cutting through the whole thickness of the bone. It is to be noted here that the thickest and hardest portion of the bone is at its upper end. This must be thoroughly divided, the vein and other underlying structures being protected by a finger inserted behind the sternum. 6. The complete separation of the two halves of the sternum I have carried out in two ways. In some cases I have commenced at the sternal notch, in others just above the ensiform cartilage. The second method has the advantage that the first part of the separation, which has to be done with but a very obscured view of the deeper tissues, takes place at a situation where the mediastinum is wide. There is less danger consequently of wounding the pleura, and by inclining the incision to the left this danger is still more averted. In the operation on the living subject I followed this method, but still I cannot say that I found in my preliminary operations on the cadaver any great superiority of the one over the other method. Whichever method is followed great care is necessary in separating the two halves of the sternum to avoid injury of the deeper tissues. In beginning from the lower end of the sternum the ensiform cartilage must be separated first from the sternum. This in young subjects can be done with the knife; in older subjects I have used scissors or bone nippers. Strong, broad-hooked retractors are now inserted into the halves of the sternum along the line of incision and moderately firm traction outwards and slightly upwards applied to them. The ensiform cartilage is now thoroughly separated from the sternum. There is but very little possibility of opening the peritoneal cavity in doing this, and even should it occur it is of no importance. With a retractor the tissues lying under the line of separation of the ensiform cartilage and the sternum are now displaced backwards, great care being taken to work quite close up to the posterior surface of this bone. Either with knife or scissors the saw-cut is carried right through the bone, extending upwards to the limit of separation of the deep

tissues. Firm retraction is made on either side and a further extent of tissues displaced backwards from the sternum, and the incisions through this latter completed to the same extent. This process is continued with due care until the whole bone is divided. In working from above the process is simple, but perhaps more risky. After thoroughly displacing backwards the deep tissues from behind the sternal notch the upper portion of the bone is completely sawn through so far as the action of the saw can be thoroughly guarded by the finger. The incision along the middle line of the sternum is then completed in the same cautious way as a trephine is usually applied to the cranial bones. A blunt chisel is inserted along this incision, and partly by the twisting of this and partly by the action of the retractors the two halves of the sternum are forced apart, any necessary assistance being given by careful incisions with the knife. This method I have not carried out on the living, but I believe it to be practicable. 7. Exposure of the mediastina. Firm traction on both halves of the sternum is now sufficient to separate them to the extent of one centimetre, enough to expose any tissues resisting separation to a greater extent. In the cadaver the principal resistance is caused by the ligamentous tissue at the back of the sternal notch. These fibres lie immediately above the innominate vein, but may easily be separated from it and be carefully divided. Another point of resistance is usually at the lower end of the sternum. This may be safely divided, and it will then be found that after dividing any other resisting fibres the two halves of the sternum may be separated to the extent of from five to six centimetres and the anterior mediastinum be thoroughly explored. Crossing the top of this space are seen the innominate vessels, behind them the trachea. The latter can be explored by the finger down to its bifurcation, and can be seen to the same extent if the vessels are thoroughly retracted. Below the vessels are seen the two pleuræ and the pericardium. The latter is a firm structure, and not likely to be injured during the exposure of the mediastinum; the former are very delicate in texture, but may with care be left uninjured. In only one of my experiments was the pleura opened, and that was due to carelessness in an emphysematous subject. Once the anterior mediasticum is exposed the exploration of the median and posterior mediastina is a simple matter, and is effected by separation with the fingers of the pericardium from the right pleura. The closure of the mediastinum after exploration is simplicity itself. Six strong silver wires passed first through the skin, then through holes bored at equal distances in both halves of the sternum, and then through the skin again, were sufficient to firmly re-unite the sternum, and in the living subject could be easily removed after cure. A gauze plug situated above the sternal notch and another, if necessary, at the lower end of the sternum would supply sufficient drainage, and a skin suture would complete the closure of the wound.

The results of my experiments on the cadaver sufficed to show the possibility of opening the mediastina through a median incision without injury to any vital structure. I have to thank Dr. Ruffer, the director of the Pathological Department of the Cairo Medical School, for much kindness and assistance. It was now necessary to ascertain what difficulties were to be met with in operating on the living subject. The important questions to be decided were what effect would the opening of the mediastina have on the respiration and circulation; and, further, would the necessary dissection be attended by any considerable or uncontrollable hæmorrhage. The division of the sternum could not fail to seriously affect, if not to arrest, costal respiratory action, but it was to be anticipated that the diaphragmatic action would continue and would suffice. It was, moreover, possible that atmosphere pressure acting on the outside of the pleura might detach it still further from the bony framework of the chest. Precautions were taken, however, to meet these complications should they arise, an apparatus for artificial respiration being prepared with an indiarubber covered glass tube to fit lightly into the trachea. Any considerable ill effect on the circulation from opening of the mediastinum was not anticipated, and the result of experiments justified this assumption. The animal chosen was a goat, as being the largest easily obtainable, and the operation was performed in the Physiological Laboratory of the Cairo School of Medicine. (I wish here to express my gratitude to Dr. Wilson, the Professor of Physiology, for great assistance and many useful suggestions.) The animal was chloroformed completely and the thorax shaved. The division of the sternum was a matter of some difficulty, as I did not know its exact shape or relative anatomy. It proved to be very narrow, much more solid than the human sternum, and curved at an acute angle. Moreover, after it had been cut through it became evident that in the goat there is practically no mediastinum, so that the incision in the sternum produced almost of necessity wounds of both pleuræ. An immediate collapse of both lungs was the result. Tracheotomy was performed at once, the glass tube inserted in the trachea and artificial respiration carried out with the bellows. During this process the heart's action became irregular and rapid, but directly respiration was re-established the circulation became normal and remained so during the whole operation. The artificial respiration rapidly produced apnœa, and all respiratory action on the part of the animal ceased, to recommence, however, whenever the artificial respiration stopped. The various mediastina could now be thoroughly explored, and it was found that the loss of blood both during the division of the sternum and the separation of the pleuræ was immaterial. The heart could be thoroughly explored—the pericardial sac was not opened—and it proved very refractory to any manipulation. A firm grasp on it produced only a temporary irregularity in its action, and immediately on release it resumed its usual rhythm. The condition of the animal remaining very good, I proceeded to close the wound. The pleuræ were closed as far as possible with a continuous silk suture, the sternum re-united with wire sutures, the skin with a continuous silk suture, a gauze plug was placed above the sternal notch, the tube was removed from the trachea as soon as normal respiration had established itself, and a tight dressing was applied round the animal's neck and chest. Half an hour later the goat was walking about the room; it ate and drank, and voided fæces and urine. A short time afterwards it was killed in order to avoid needless suffering.

Having convinced myself that the opening of the mediastina did not of necessity inflict such injury as to entail the death of the individual, I determined to attempt similar operative interference for the relief of human suffering. I have had lately under my care three cases in which the question of surgical interference arose. In the first two the conditions were so entirely against a successful issue that I decided not to make any attempt. The first was a case of mediastinal tumour pressing on the innominate vein, producing œdema of the face, neck, and arm, and on the trachea producing gradually increasing dyspnœa. On first seeing the patient it was evident that no hope was left of curative treatment, as there was certainly deposit in the liver and probably in the lungs, and the mediastinal tumour was probably glandular in nature and of secondary malignant growth. I could do nothing but await symptoms of urgent dyspnœa and attempt to relieve these by tracheotomy and the insertion of a long tube. The symptoms eventually arose; tracheotomy was attempted, and the patient died on the table. The second patient is still alive, and it was with a view to operative interference in his case that I first commenced my experiments. He was admitted to the hospital suffering from urgent dyspnœa of some days' standing, his condition being such that tracheotomy was performed at once by my Egyptian assistant, who was of opinion that the case was one of syphilitic laryngitis. Finding that tracheotomy gave no relief he sent for me. I could find no sign of any mediastinal tumour or other cause of pressure on the trachea, but the obstruction being evidently some distance below the tracheotomy wound I passed a six-inch flexible tracheotomy tube down the trachea, and passed an evident obstruction with immediate relief to the breathing. Careful examination a few days subsequently afforded no definite signs whatever as to the cause of the obstruction. In about fifteen days, however, infiltration began to appear above the sternal notch, and to-day, some two months from the date of tracheotomy, the whole base of the neck is one infiltrated sarcomatous mass. I may say that, in spite of an absence of any syphilitic history, iodide and mercury were thoroughly tried. In the earlier days after tracheotomy the case seemed eminently fitted for mediastinal exploration, but the appearance of infiltration at once set aside all possibility thereof.

My third case was a more favourable one, and after much consideration I operated on the patient on Jan. 25th, 1897, and to-day (Feb. 6th) he may be considered as practically cured. He was an Egyptian fellah aged about twenty-five years. No family history was obtainable. He had suffered for some months (according to his account) from pain and swelling in the sternal region, with increasing incapacity for

work, and some cardiac palpitation, with pain and oppression in the epigastric region and shortness of breath on exertion. Examination disclosed a very prominent sternal region, the skin over it being infiltrated and tender to pressure. The sternum was the seat of a tumour which occupied nearly its whole length and which extended on either side into the rib area. The tumour was hard in the greater part of its area, softer and tender at others. On percussion the whole tumour area was dull and measured some twenty centimetres in length by seven in breadth. The tumour was elevated about three centimetres above the normal level of the sternum. The heart dulness could not be separated laterally from that of the sternum, but the apex beat was displaced outwards rather more than two and a half centimetres. The heart sounds were normal. The chest expanded well and the breath sounds were normal, except that behind the first part of the sternum the tracheal respiration was harsher than usual. There were no other signs of pressure on the trachea and no signs of pressure on the veins. There was no enlargement of the cervical glands; all the organs of the body were healthy. The pulse was 82 and the temperature was normal in the morning and 37·3° C. at night. Tuberculous caries and necrosis of the sternum being a common disease in Egypt, there being no signs of any sarcomatous growth, and syphilis being absent, a diagnosis was made of infiltrating tuberculosis of the cancellous tissue of the sternum and possibly of the mediastinal glands. The patient being incapacitated from gaining his living and his general condition being good, it was decided to attempt his relief by operation. He was chloroformed and an incision made from the cricoid cartilage to the ensiform cartilage, the skin being reflected on either side and the trachea and sternum exposed. The sternum was soft and friable all over, and larded, as it were, at various points with cheesy, tuberculous deposits. I have on several occasions seen a similar condition in the tibiæ of tuberculous children; the whole bone is greatly thickened and at the same time porous, and presents at various points deposits the size of a bean of tuberculous, caseating débris. The condition exactly resembles that often found in strumous glands. The sternum was next carefully divided from the ensiform cartilage and was found to be very porous and greatly thickened. This was really the most difficult part of the operation. It would have been easier to have split the ensiform cartilage, but I wished to spare as far as possible the insertion of the diaphragm. The mediastinal tissue underlying the end of the sternum was then depressed and the sternum split with saw and chisel, working little by little until the bone was divided in its whole length. It was found thickened to the extent of three centimetres in some parts and studded with caseous deposits. In dividing the sternum it was often necessary to remove large portions of infiltrated bone with the gouge. On carefully examining the two halves of the bone they were found to be so infiltrated with tubercle that the whole sternum had to be removed bit by bit with the exception of the upper portion—a centimetre and a half in length—which was simply divided. This division was necessary in order to remove two enlarged caseous glands situated behind it in the mediastinum. After the division of the sternum and separation of its two halves this removal was effected with the greatest ease, the glands peeling as readily off the innominate vein as they would have done off, say, the internal jugular vein. During the whole operation there was remarkably little hæmorrhage; half-a-dozen arteries were seized with pressure forceps and a few oozing points were touched with the cautery. At no moment was the heart's action troubled. The costal respiration ceased on the division of the sternum, but the abdominal respiration was maintained with complete regularity. The wound left by the operation was very large—larger, of course, than it need have been in most mediastinal incisions, in that nearly the whole of the sternum had been removed on account of tuberculous deposit. The sides of the cavity were formed by the ends of the costal cartilages and the tissues in between them, at the lower end of the wound was the ensiform cartilage, at the upper end the trachea (exposed in case tracheotomy became suddenly necessary) and the innominate vessels crossing it. The floor of the cavity was formed by the mediastinal tissue, on either side were the pleuræ and on the left side the pericardium. The pleuræ were not adherent to the lungs or the pericardium to the heart, the movements of all three organs being perfectly free. Although aseptic precautions had been taken, I did not dare, considering the tuberculous condition of the bone, and in spite of the total absence of pus, to attempt complete closure of the wound. I considered it safer to plug with sterile dermatol gauze, which remained unchanged for forty-eight hours. During the whole of this time the patient's condition was most excellent: he had but little shock, his temperature never exceeded 37·1° C., his respirations were from 24 to 26 and entirely abdominal, his pulse was from 80 to 90, and he slept without morphia. On the second day after operation chloroform was again administered and the plug removed. It was found that the ribs had come together to a very considerable extent, so that the pericardium and pleuræ, though still visible, were but little uncovered. The wound was quite clean, and it was decided to close it. A thin strip of gauze was laid along the bottom of the wound to serve as a drain, and the soft tissues were closely united from one end of the wound to the other with a continuous wire suture, a small opening being left for the gauze to protrude above the sternal notch and at the lower end of the wound. Two days later the temperature rose to 39·4° C., and the respirations to 36, and there was a slight attempt at coughing. This constituted the only real difficulty in the whole progress of the case. The endeavour to cough was very distressing to the patient, and was practically unavailing. The feeble movements necessary for respiration had been carried on without difficulty, but the violent expulsive action of coughing could not be carried out with a divided sternum. A purgative was given, and the dressing changed. On removing the gauze plug a slight retention of secretion, sero-purulent in nature, was discovered. The escape of this secretion was followed by a fall of temperature to normal, and a cessation of the desire to cough. Three days later there was a rise in temperature to 39·1° C.; a purgation was followed by immediate cessation of these symptoms. To-day the wound is completely dry, the gauze has been removed, and the patient is entirely convalescent. I shall keep him in bed, however, for another thirty days at least, in order to allow of thorough consolidation. His costal respiration is gradually re-establishing itself, but has not yet returned to the normal. I have to thank Dr. Sandwith, who saw all three cases with me, and who was present at the second operation, for much assistance and advice.

The practicability of mediastinal exploration has been, I think, established by the above case; experience only can show whether the risk thereby entailed is greater than the profit obtainable. In Cairo we have unfortunately but little literature available, and I cannot be sure whether a similar operation has ever been performed. Péan has, I know, removed a portion of the sternum to get at a mediastinal growth, operating in a diving-bell within which a pressure of two atmospheres was maintained. This information I owe to an assistant at the operation, and I believe that a description is to be found amongst Péan's Cliniques. The operation presented great difficulties and the patient, I believe, died on the second day. It is evident that in an operation on the mediastinum there must always be a danger of wounding the pleura; but such a wound, followed as it naturally would be by a collapse of the lung, need not of necessity entail a serious accident. Tuffier and Hallion have shown[1] that the dog's pleura can be freely opened without ill effect, and I have myself opened the pleural cavity with impunity on several occasions when operating on liver abscess or tumour. Should any difficulty be anticipated, it is a simple matter to carry out artificial respiration with the bellows through a tracheotomy tube. In my experiments I have found that for this a Trendelenburg's cannula is by no means necessary. A bent glass tube covered at its lower end with an indiarubber tube of a smaller diameter and projecting half an inch beyond the glass is quite as effectual and much simpler. Tubes of various diameters should be at hand, and the one inserted which just plugs the trachea. This is quite sufficient to prevent any escape of air at the slight pressure necessary for respiration. If it be established that median thoracic incision is a fairly safe procedure, I have no doubt that it will constitute the most generally useful route to the thoracic organs. And if once a safe route is established a great field for surgical interference lies open. That the lungs are amenable to surgical interference has been frequently proved, and many surgical procedures, from the removal of a foreign body from a bronchus to the extirpation

[1] Semaine Médicale, 1896, p. 480 et 503.

of the whole lung, may some time or other be classed amongst established operations. Heart surgery is still quite in its infancy, but it requires no great stretch of fancy to imagine the possibility of plastic operations in some, at all events, of its valvular lesions. That the heart is tolerant of wounds and injuries has been proved over and over again, and I see no reason why it should not be equally tolerant of a deftly guided scalpel. Surgery of the large thoracic vessels is by no means modern, and an improved technique should render interference with them much easier and much surer. Not only will the anterior mediastinum with its not uncommon growths, innocent and malignant, lie open to us, but also the median and the posterior, and operations on the œsophagus, the thoracic duct, and the great nerve trunks of the pneumogastric and sympathetic may come within our range. Briefly stated, should median thoracic section establish itself as a safe operation the last great cavity of the body and its contents lie open to the surgeon's hand and knife.

Cairo.

REMARKS SUGGESTED BY DR. CLIFFORD ALLBUTT'S PAPER UPON ALBUMINURIA IN PREGNANCY.

BY LOVELL DRAGE, M.A., M.D. OXON.

TO a working obstetrician like myself great pleasure was given by a perusal of this paper,[1] so full of thought and interest. In a paper upon Puerperal Fevers published in THE LANCET on Feb. 24th and March 3rd, 1894, the following sentence will be found: "The characteristically original and able work of the late Dr. L. G. Wooldridge is suggestive of the idea that the full elucidation of this subject will be derived from chemical investigations, and especially those in connexion with the various conditions of the blood." When I was writing these words I had not the knowledge of such work as I now have, but it was a matter of certainty in my mind that in the case of the puerperal fevers there was a great deal more to be taken into consideration than the simple dictum that puerperal fevers were the result of dirt and nothing else. This dictum, supported as it has been in public by gentlemen in the same position as its author with a view of promoting certain legislation, is one strenuously to be combated, and it was my endeavour in the paper which I wrote in 1893 and published in 1894 in THE LANCET to prove that there were conditions connected with the mother to be taken into account in considering the causation of all puerperal fevers. At that time I was very much taken up with the consideration of the causation of puerperal thromboses. Since then a large experience of such cases and a large experience of women who were likely to suffer from eclampsia have led me to think more and more in the same direction as that in which Dr. Allbutt points, though without the same exact knowledge of the chemistry involved.

What is the basis upon which my thoughts rest? To take the subject of Dr. Allbutt's paper first, and a case which recently gave me grave anxiety before delivery. The history of the patient: Five deliveries, one child stillborn; a great many miscarriages; puerperal sepsis twice, once leading on to parametric abscess; at the last delivery eclampsia. The patient was about thirty-five years of age, and at my first examination there was albumin in the urine. There was also general anasarca, well marked but not excessive. This history was sufficient in itself not only to arouse special interest, but special anxiety for the result. The patient was therefore placed upon a treatment of purgation accompanied by treatment by iron, and a diet in which milk was pushed. Two scruples of compound jalap powder and one of the acid tartrate of potassium were given in the first place without result. This was followed by an active purgative pill, which produced an evacuation. Subsequently the patient took, night and morning, a drachm of Epsom salts and fifteen drops of the liquid cascara extract with some ginger. The result was satisfactory, for two or three liquid actions of the bowels resulted every day. Besides this, a mixture containing the freshly precipitated oxide of iron was given thrice daily. The labour came on at the end of the eighth month, and was terminated so far as the child was concerned before my arrival. The albumin in the urine at once diminished, and the patient made an excellent recovery. The treatment, which is a time-honoured one in this practice, is one which I have carried out because it is based upon a working hypothesis. Purgatives which produce free watery evacuations have an action upon the blood. What that action is cannot be definitely stated, but Dr. Allbutt's paper indicates a possible, if not a probable, one, and the same remark applies to the action of iron salts.

Other conditions connected either directly or indirectly with pregnancy seem to me to support Dr. Allbutt. First, the œdematous condition not infrequently met with in pregnant women, with no albumin in the urine and with no eclampsia. These women, although often so swollen that they cannot wear their rings, do not suffer in health; but surely this is a condition which we can connect with the more serious one. Secondly, there is the condition which the late Dr. Matthews Duncan described in his lecture upon Hydroperitoneum—the collection of fluid in the abdominal cavities of elderly women who have borne children without any sign or symptom of disease of organs. Here, again, is a condition difficult of explanation no doubt, but eminently one to be considered in connexion with the subject. Thirdly, there are the various conditions connected with the vomiting of pregnancy. The late Dr. Matthews Duncan fully recognised the fact "that the condition of the blood is probably a chief part of the cause of the proneness of women to disease of the kidney and uræmia," the condition of the great glands being, in his opinion, "probably the cause of their proneness to further dangerous stages of parenchymatous degeneration, chiefly of the liver, but also of the kidneys and other organs." He looked upon the parenchymatous degeneration of the great glands as the first stage of the serious cases of vomiting in pregnancy, the degeneration present even in healthy pregnancies. It is not very difficult now to suggest the link in the causation of such troubles if Dr. Allbutt's theory is accepted. Dr. Duncan, with his great shrewdness and unrivalled experience, knew that the conditions connected with certain cases of the vomiting of pregnancy were not due to nervous causation, but he did not know what is now known of chemical conditions connected with the blood. He pointed to the liver as being the organ most at fault, and in this he was doubtless correct; the knowledge of his day showed that there were changes in the structure of that organ, but it did not show that there were chemical substances circulating in the blood of pregnant women which might account for the change in its structure as well as for that in other glands. His teaching on this subject is, however, only part of the debt which his pupils owe to him, and it is a matter of interest to read Dr. Allbutt's paper with that teaching present to the mind.

Now, to take the subject of thromboses. These have occurred in my practice at times varying between ten days and the fourth week after delivery, with no rise of temperature or any indication of sepsis before the date of the attack. It certainly appears unlikely that there is a connexion between these attacks and sepsis at the time of delivery, and an explanation based upon the theory propounded by Dr. Allbutt appears more reasonable and is certainly that to which I incline. The one predisposing factor at the time of delivery which has been brought forward as conducive to these cases is hæmorrhage, and in none of the three cases which have occurred in my practice has hæmorrhage been present of such a character as to call for remark. The late Dr. Wooldridge's paper on Auto-infection in the Causation of Cardiac Disease certainly leads me in the direction of belief that these thromboses are due to the presence in the blood of some chemical substance peculiar to the blood of puerperal women. It also lends support to Dr. Allbutt's paper.

Finally, what evidence will a study of puerperal fevers provide? Let us put aside once for all statistics, which can be of no possible utility in the consideration of causation. As every working obstetrician knows full well, it is impossible to forecast the progress of a patient during the lying-in period. The cases which have demanded great attention and caused anxiety during the actual labour are not those which, as a rule, give further anxiety, and I include the third stage of labour, which is the critical one so far as puerperal fevers are concerned. It is the critical one because, in the first place, of the difficulty of certainty as to complete removal of all decidual remnants,

[1] THE LANCET, Feb. 27th, 1897, p. 579.

and, in the second place, of the chances of hæmorrhage. The latter is not a difficulty which has occurred during my presence at a case, although I have lost a patient some time after delivery at which I was not present and do not know the details of what actually occurred. Some patients habitually lose more blood than others, and others perhaps lose more than they can afford to lose, even when only what may be called an ordinary loss occurs; some begin to lose dangerous amounts of blood after the departure of the accoucheur. The chances of dangerous hæmorrhage, therefore, have always to be reckoned with.

Excluding the tears of maternal tissues, which may always occur whether the labour is naturally effected or not, there is no danger so great as the detention of decidual remnants. Here is a danger of no small kind to the patient, and one which presents itself in no small proportion of labours, however great the care of the accoucheur. I know few matters which give me greater anxiety than the consideration as to whether the uterus is completely evacuated. Even if a complete exploration of the uterine cavity is undertaken in case of serious doubt no certainty can be arrived at. It has frequently been a matter of great surprise to me that the subsequent progress of events has proved that my fears were without foundation. On the other hand, when I have felt satisfied in my own mind perhaps a piece of membrane has come away afterwards without the slightest sign of disturbance, or a rise of temperature has led me to douche the patient and wash the offending material away, and in a few cases to afterwards explore the uterine cavity, and to remove with finger-nail or curette what should have come away during the third stage of labour. Such experiences have led me more and more to think of the reason why in some patients even large pieces of placenta are sometimes left in the uterus for months, and no symptoms of sepsis appear, while in others the presence of even a small shred only of membrane will produce such symptoms—and I include symptoms which to some might appear too trivial to be thus dignified. I do so because it is by the careful watching of the lying-in patients that puerperal fevers, those which are capable of resulting in death, or at all events in crippling for months, can be nipped in the bud.

No doubt the present craze is to think that puerperal fevers are the result solely of dirty methods and direct infection. In a practice where labours are looked upon as surgical operations, and the same care is taken in the one case as in the other, it is possible to eliminate all cases due to such causation, but it is not possible to eliminate the others although it is possible to prevent any serious aspect appearing. Now some have invoked conditions of sanitation to account for puerperal troubles. In our practice here during the last eleven years nearly 1200 women have been attended under all sorts of conditions—the best and the worst possible. I have never yet been able to connect these conditions with symptoms of sepsis; indeed, if I were to hazard a rough opinion it would be to the effect that it is the women who come to their labour under the more favourable conditions who are most liable to sepsis. Dr. Allbutt's paper provides an explanation. The women of the richer classes are, I believe, in comparison worse fed and consequently worse nourished than their poorer sisters, although they have everything that money can command. Not only so; in many cases they are worse fed in the first few months of life, although this is not due to lack of food, but to imperfect method of feeding. The children of the poor die from inferiority in methods of feeding sometimes, from inferiority of quality frequently, and from both combined frequently. The children of the richer classes are more often brought up alive certainly, but crippled in health, from imperfection in the method of feeding.

I cannot estimate the amount of harm which is done by the imperfect methods adopted in the artificial feeding of the children of the richer members of the community, but I know that it is very considerable. The resisting power to disease in this class is lessened at the commencement of life, and is not increased as life goes on. It is a matter of no surprise to me, then, that at the time of labour amongst the richer classes the resisting power to sepsis is less than it is in some of their poorer sisters. However this may be, the fact remains that puerperal sepsis appears in one degree or another even in practices where every care is taken to prevent direct infection and to remove the nidus which may become the seat of infection, and it appears to me that Dr. Allbutt's paper is based upon scientific facts which help to explain many of the problems which present themselves to working accoucheurs, and not to explain them only, but to provide a working hypothesis for treatment. Infection to the superficial eye is a matter capable of easy explanation, but when any attempt is made to account either for the vagaries of epidemics or for sporadic outbreaks of infective diseases, or for the progress of epidemics, or for their origin, superficial theories are found curiously deficient. So far as puerperal fevers go, those caused by direct infection can now be separated from those which are not so caused, and Dr. Allbutt's paper is very useful in pointing to the conditions to be dealt with outside direct infection. The fact, however, remains, that lying-in women are from the conditions present with them, irrespective of the actual delivery and those the result of delivery, especially liable to infection. The mind of the accoucheur should not only therefore be employed in dealing with the latter, but should be alive to the various physiological conditions which are part of the problem. This fact is recognised in a half-hearted manner by some sanitarians—e g, Dr. Williams, in his paper read before the Epidemiological Society upon Puerperal Mortality,[2] attributes the high mortality existing in Wales from puerperal troubles to the conditions under which the women live, though it is quite obvious that his enthusiasm for legislation causes him to put this factor on one side to a great extent when he comes to consider the causation of puerperal mortality generally. Dr. Williams, in dealing with one epidemic, states that a number of cases attended by infected midwives escaped entirely. Surely the women who thus escaped did not do so owing to the care of the midwife any more than the women who show signs of sepsis in the care of accoucheurs need necessarily be directly infected by the want of antiseptic precautions with which medical men at large are charged by the *élite* of the Obstetrical Society of London.

Hatfield.

SOME UNUSUAL AFTER-EFFECTS OF STRYCHNIA POISONING.

BY N. B. DARABSETH, M.B., C.M. ABERD., M R C S. ENG.

SEVERAL features of interest are presented by the following case which occurred in my father's practice and which exemplifies some unusual after-effects of strychnia poisoning.

In June, 1895, a man consulted us on account of pain and spasms in his upper and lower extremities, accompanied by occasional twitchings of the muscles of the face. In October, 1892, he had been poisoned by strychnia, the dose taken having been about twenty grains. He was at once given a large quantity of snuff and water, which immediately caused free vomiting. My father saw him about half an hour after the poison had been taken. The man was then suffering from severe spasms of the whole body and opisthotonos, and was unable to swallow. Inhalations of chloroform were kept up from 10 P.M. until the following morning, being given whenever the spasms came on; subsequently, when he was able to swallow, a chloral and bromide mixture was given by the mouth. The patient recovered perfectly from the immediate effects of the poison and returned to his work in the ensuing week. In May, 1895, two and a half years after the poisoning with strychnia, my father was again sent for, and found the patient suffering from spasms in his limbs and back: the attack, however, was not very severe and passed off under the use of chloral and bromide. It was practically impossible to obtain a proper history of his condition during the period which had elapsed since the poisoning. He said that for the first six months he was fairly well, although weak and sore; then he once got wet by exposure to rain, and from that day he suffered in his limbs and back from pains which were supposed to be rheumatic both by himself and by several medical men who treated him. In June, 1895, according to my notes, his condition was as follows. He was twenty-eight years of age, had an anxious look, and of late had been slightly dull and forgetful and very languid. He complained of aching pains and formication in both the upper and lower extremities and of fatigue on the slightest exertion. He had peculiar sensations in his limbs

[2] THE LANCET, April 18th, 1896, p. 1067.

sometimes as of burning, at other times as of sitting on an ice-cold seat. In the upper extremities he often felt as if an insect was running with great rapidity down his arm to the fingers; sometimes the sensation was as if the insect stopped half way. Some of the muscles, such as the deltoid and the deep muscles of the back of the neck, were in a constant state of contraction, so that they felt hard; his walk was erect, with the head slightly thrown back. He complained of pain in the shoulders and in the back of the neck and head. No actual spasms in the limbs were noticed during the daytime, but while walking he used to feel his legs start up quickly, which made locomotion easier for him, and the muscles of his face sometimes twitched whilst he was in the act of speaking, especially the orbiculares palpebrarum and the dilators of the nose; he always felt tired after even a short walk. The right arm was harder over the deltoid and also larger by half an inch than the corresponding portion of the left arm. At night he was generally restless and subject to sudden startings in the legs, hands, or back, which had the effect of waking him if he happened to be asleep. Chloral gave immediate relief, and he could not sleep without it. The spasms did not cause cramps, but came on in jerks like electric shocks, and generally occurred either when he was engaged in some work or else when he was asleep. When he was sitting quietly or talking his fingers would become abnormally extended. The patellar reflex was exaggerated. The pupils and optic disc were normal, and he had no nystagmus or headache, although he suffered from pain in the back of the neck due to the contraction of the muscles. His gait was quite normal; he could also stand with feet close together and eyes closed and there never was any weakness in the legs, but only a feeling of fatigue as if from overwork. He was constantly under the impression that he would become paralysed, which made him very anxious and melancholy. The only drugs that gave him immediate relief were chloral and bromide, but the effect was only temporary and great depression ensued. Belladonna, gelsemium, physostigma, and ergot were successively tried, but they caused additional spasms or tremors, and after three or four days' trial of each the patient refused to continue the treatment. Tincture of belladonna was again tried in two-minim doses and gradually increased to fifteen minims three times a day, after five months of which treatment, combined with tonics such as iron and quinine, the patient gradually improved. The shocks and spasms became gradually less, and by the month of November the muscles of the arm and back of the neck were relaxed, there were only very slight and occasional attacks of spasm at night, and the patient was consequently able to sleep well. I last saw him in March, 1896, and found him comparatively well and cheerful. He said that he still felt shocks occasionally, but he was able to attend to his work and even to take long walks and play cricket.

I believe that the pain and spasms were due solely to the overdose of strychnia, that they must have commenced not long after the immediate effects of the poison were recovered from, and that they were the symptoms which were mistaken for rheumatism, not only by the patient, but by some of his medical advisers unaware of his previous history. I have, however, not read of a poisonous dose of strychnia causing such symptoms continued over so long a time, for, ordinarily, if the case does not prove fatal the patient recovers quickly without experiencing any after-effects. It is very difficult to understand why the symptoms should persist so long. I believe that the very large dose which was taken caused congestion of the spinal cord, and that this passing into a chronic stage gave rise to these reflex symptoms. Belladonna was the only drug which seemed to be useful; it probably acted as a spinal sedative. Ergot was given with the expectation that it would relieve congestion, but it caused more spasms and had to be stopped after three days. The patient is certain that no medical man gave him strychnia or nux vomica; he always read the prescriptions, and said that what was ordered was generally iodide of potassium.

Bombay.

PROPOSED COTTAGE HOSPITAL FOR WESTBURY (WILTSHIRE).—A committee has been appointed to formulate a scheme for the provision of a cottage hospital for Westbury and neighbourhood to commemorate the Queen's Diamond Jubilee, for which purpose Mr. W. H. Laverton has promised a site.

CASE OF CONGENITAL MALFORMATION OF THE NOSE.

BY W. R. H. STEWART, F.R.C.S. EDIN., M.R.C.S. ENG.,

SURGEON TO THE EAR AND THROAT DEPARTMENT, GREAT NORTHERN CENTRAL HOSPITAL.

A MAN, aged twenty-five years, was sent to the Great Northern Central Hospital by Dr. Buck. The patient stated that he had been in his present condition as long as he could remember, and had been told that a tumour had been removed from his nose when an infant. He applied for relief, being unable to obtain employment owing to his disfigurement. On admission a deep cleft was found situated in the middle line of the nose running down from the nasal bones to the upper lip and completely separating the nose into two halves, the tissue in the cleft being cicatricial. Under chloroform, the anterior nares having been plugged with blue wool, an incision was made down the middle line from the fronto nasal junction to the upper lip. From this latter point branch incisions were carried to each tip, and the skin, which was very adherent, was dissected well back. The

halves of the septal cartilage were found to form two distinct septal cartilages, the right being the larger. The bottom of the cleft was filled with dense, very hard bone, and at the lower part greatly thickened cartilage. The bony portion was with some difficulty removed by gouge and bone forceps and the cartilaginous portion carefully pared down. The two cartilaginous halves of the septum were then released as much as possible from their bony attachments and brought together with deep silk sutures. Superabundant skin was then cut away and the flaps were carefully brought together with horsehair sutures. The patient made a good recovery and has now a very presentable nose.

This malformation is, in my experience, unique. The formation of the septal cartilage is due to the coalescence of the nasal laminæ of the lateral nasal processes. This coalescence was evidently prevented by the formation of what was no doubt a dermoid cyst. An excellent cast, taken by my colleague, Mr. Mower White, is in the museum of the hospital.

Devonshire-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE ASSOCIATION OF SLOW PULSE AND SYNCOPAL ATTACKS.

BY W. ELLIOT RISDON, M.D., B.S. LOND.

IN this connexion the following brief notes of a case which presented some difficulty during life may possibly be of interest.

The patient, a professional man, aged thirty-eight years, of athletic habits and previous good record, was suddenly seized with faintness whilst quietly walking along the street. When first seen he appeared to be dying, but after an hour's treatment he rallied. His heart was then carefully examined. The cardiac impulse was in the normal situation and the sounds were free from murmur; the action was regular, with a pulse of 70 per minute. On inquiry he stated that this was his normal pulse-rate and that he had never previously had any indication of cardiac weakness. After resting for some hours in the recumbent posture his circulation appeared so satisfactorily re-established that it was thought possible to move him with safety. On sitting up, however, his heart again failed and his condition became critical. After remaining pulseless and deeply unconscious for two hours an improvement again took place and the pulse gradually became of good force, beating from 24 to 30 per minute. There were marked pallor and slight coldness of the extremities, but no pain. The respirations were 14 and the urine was normal. After remaining in this condition for some time the pulse was noticed to become intermittent. This was at first only occasional, but soon became more frequent until there were from ten to twelve dropped beats in succession, the heart resuming with normal force after an interval of twenty or thirty seconds. During this interval there was brief loss of consciousness with slight tonic spasm of the muscles of the face and limbs and dilated pupils, and no sound of ventricular contraction could be detected. The case terminated fatally three days later, but there was no material change in the character of the symptoms, the pulse remaining abnormally slow to the end.

Necropsy.—On post-mortem examination the left ventricle was found to be somewhat hypertrophied and streaked with fat at one spot near the apex; the valves were healthy. There was a small patch of atheroma in the first part of the aorta, but the coronary arteries were normal. The lungs were œdematous, but all the other organs were healthy.

The symptoms in this case appear a little difficult of explanation except upon the theory of disturbed cardiac innervation, for which, however, there was no apparent cause. The temporary lapses into unconsciousness and the attacks of tonic spasm appeared to be the result of cerebral anæmia.

Chancery-lane, W.C.

DYSTOCIA FROM RELATIVE SHORTNESS OF THE FUNIS.

BY JOHN A. LYCETT, M.D. ST. AND.,
SURGEON TO THE WOLVERHAMPTON HOSPITAL FOR WOMEN.

A WOMAN, aged thirty-three years, the mother of two fine healthy girls, the younger three years old, was recently attended by me at full term. The labour was slower in progress compared with her previous confinements, the pains being of short duration and not strong. The presentation was first cranial or left occiput anterior. When the head was bearing upon the perineum evidence of the nature of the difficulty became manifest by great retraction between the pains, which were becoming shorter and less effectual, though not from exhaustion, as she continued cheerful with a good pulse. Pelvic examination showed no cause, there being ample space with yielding soft parts, and the nature of the presentation was further confirmed by feeling with ease the pinna of the left ear. Abdominal examination showed a single gestation with the placenta at the fundus, where the rotundity became much less defined during uterine action. Though during labour a firm bandage had been applied round the abdomen it became evident that nature, unaided, could not effect delivery, which had appeared so imminent for over an hour. Forceps were therefore used and the occiput carried round the symphysis without injury to the perineum; this was accompanied by hæmorrhage. The diagnosis was now verified by finding a strong, rather thick cord passing over the thorax round the back of the neck. The tension was so great that it was impossible to slip it either over the head or shoulders, so I divided it between forceps, as it was uncertain which was the fœtal end. The shoulders and arms were now freed, and a male child weighing over eleven pounds, and twenty inches in length, was delivered. As hæmorrhage continued rather free and the placenta could not be expelled by Crédé's method ergot was given, and the hand immediately introduced, when about a fifth part of the placenta was found attached at the fundus with a large clot. I regret that the length and strength of the cord were not ascertained, but it was about nineteen inches long, and as an average cord shown by the late Dr. Matthews Duncan [1] will bear a weight of eight pounds this evidently would not have broken under a weight of twelve pounds. Generally when the cord is too short the placenta under the tensile force of labour becomes detached from the uterus as in this case, but the cord has been known to tear from either the placental or umbilical site, and when weaker than normal snap through during labour, as related by Dr. Johnson.[2] It is not uncommon for the cord to encircle some part of the child, and less marked degrees of relative shortening may arise sufficient to retard delivery, even to partially detaching the placenta without being recognised. During an experience of nearly twenty-five years I have no note of labour being impeded from actual shortness, but have met with several where relative shortness has been a cause of dystocia. This, however, is the only occasion where the symptoms and physical conditions were sufficiently obvious to enable a diagnosis to be, with reason, inferred before delivery. The mother predicted a male child partly from the different character of the labour, and also from carrying it during the later months much higher than in the previous gestations.

Wolverhampton.

CASE OF TRANSPOSITION OF THE VISCERA, WITH A TRICŒLIAN HEART.

BY HENRY JELLETT, M.D., B.CH., B.A.O. DUB.,
ASSISTANT MASTER, ROTUNDA HOSPITAL, DUBLIN.

IN June, 1896, I was summoned to see a baby who had been just born in the Rotunda Hospital in an asphyxiated condition. When seen, the child was respiring feebly, the heart was weak and irregular, and the face and body were cyanosed. I commenced Schultze's method of artificial respiration, gave the child hot baths, and rubbed the lips and mouth with whisky. I felt for the heart in the usual manner—i.e., by pressing the fingers upwards under the ribs a little to the left of the middle line—but I was unable to feel its pulsations owing to the presence of what I at first took to be a greatly enlarged liver. I then palpated the abdomen on the right side to determine the size of the liver. Instead of finding it there as I expected, I was able to press my fingers upwards beneath the ribs, and to feel the pulsations of the heart to the right of the middle line. It was plain, then, that it was a case of transposition of at least the heart and liver. All attempts to revive the infant failed, and the child died in ten minutes. I made a post-mortem examination of the body the same day, and discovered that it was a case of complete transposition of the viscera. The normal position of the lungs, heart, liver, stomach, spleen, and intestines was reversed. The heart was almost twice the normal size, and when opened was found to have but three cavities—two auricles which opened into a common ventricle.

Many cases of partial transposition of the viscera have been recorded, but the number of cases in which complete transposition occurred is comparatively few. Two theories as to

[1] Transactions of the Obstetrical Society, vol. xxiii., 1881; Brit. Med. Jour., vol. ii., 1881, p. 857.
[2] Brit. Med. Jour., vol. ii., 1882, p. 132.

its causation are suggested. Von Baer has found that in a few instances the embryo lies with its left side directed towards the yelk, whereas the right side is normally in this position. He considers this condition in all probability the cause of the transposition. Dr. Fraser, in a communication read before the Royal Academy of Medicine in Ireland (May 25th, 1894), thinks the transposition may be due to the subject having been one of twins which were developed from a single ovum and in which dichotomy was complete. He also exhibited a thoracopagus monster, in which the right-hand fœtus had complete transposition of the viscera.

Dublin.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF TUMOUR GROWING FROM THE BASILAR PROCESS OF THE OCCIPITAL BONE AND COMPRESSING THE MEDULLA AND PONS; NECROPSY; REMARKS.

(Under the care of Dr. H. D. ROLLESTON.)

THIS is a very interesting account of an unusual form of tumour of the base of the brain, which, growing from the bone, produced symptoms, which are carefully described, by pressure on the important parts at the base. "Tumours of the base of the brain[1] deserve special mention. They usually spring from the dura mater, sometimes from the bone. Sarcoma and carcinoma are most frequent; less common are psammoma, cholesteatoma, syphilitic gumma, enchondroma, fibroid growth, and hydatid cyst. The petrous portion of the temporal bone, or the dura mater over it, is the part from which growths most frequently spring. The neighbourhood of the sella Turcica is another common seat, and sometimes they originate in the posterior fossa, adjacent to the foramen magnum. They may spring from the bone in this part. They often attain a considerable size, even that of a hen's egg, and compress the superjacent brain." For the notes of this case we are indebted to Dr. W. Thomas, house physician.

A boy, aged seventeen years, was admitted into St. George's Hospital on Aug. 27th, 1896, complaining of seeing double when he looked to the left. He said that two months ago during very hot weather his speech became indistinct. He also suffered from severe pain in the top of his head. He was sick every morning, retching a good deal, but bringing up very little. This continued for three weeks. The sickness then ceased and his speech became clearer. The headache remained and he noticed that on looking to the left he saw double. He was a heavy-looking boy and took some little time to collect his thoughts on being asked questions. The right side of his face seemed to move less easily than the left, but as it never altered it may possibly have only been habitual and not connected with his disease. On asking him to put out his tongue it was noticed that it was pushed over to the left side. It was covered with a thick, creamy, yellow fur, and the left side felt flabby when pinched between the fingers. The movements of the eyes were perfect in all directions except the outward movement of the left eye. The left eye did not move outwards so quickly or so far as the right eye did inwards. There was some loss of power in the left external rectus. It was in performing this movement that diplopia resulted. The pupils were equal and reacted to light and accommodation. The fundi were normal. No evidence of paralysis of the sterno-mastoid or trapezius could be made out. The knee-jerks were normal, the left being slightly weaker than the right. Superficial reflexes were present, but sluggish. There was no ankle clonus. There was no loss of power in the arms and legs. The right grip was stronger than the left. He was able to walk perfectly and could turn round quickly without faltering. The heart and lungs were normal. The abdomen was slightly retracted, but otherwise normal. There was on marked wasting. The pulse was 110, regular, and fairly strong. The urine was clear, specific gravity 1020, no albumin or sugar. There was a deposit of phosphates on boiling. His bowels were most irregular, acting only with enemata. Eventually they were found to act better with German brandy and occasional enemata. The tongue did not clean after this, so its coat was thought to be due to imperfect mastication. On getting up in the morning he complained of giddiness and a feeling of nausea. After two or three days he became sick every morning and sometimes during the day. The headache continued, the pain being most intense in the occipital region. He was given quinine and iodide of potassium, but without any effect except slight coryza and an acne rash. On Sept. 25th he was given fifteen grains of sulphonal with ten grains of phenacetin twice a day. This relieved him completely of his headache, but kept him in a drowsy condition during the day in addition to making him sleep at night. It was found that giving him occasional doses at night kept him free from pain. This treatment was continued for seven weeks without producing any toxic effects. About a week after his admission it was noticed, after swallowing some milk, that he coughed and a portion of it regurgitated through his nose. At the same time his voice acquired a slight nasal intonation and his speech became somewhat thick. On examining the fauces the soft palate was seen to act sluggishly, the left side more so than the right. There was some response to a stroke with a penholder on the right side, but hardly any at all on the left. He, however, continued to take his food well for some time after this without any further regurgitation taking place. The giddiness and retching became more marked on rising. His gait became unsteady and he complained of great weakness in the legs. He was, therefore, kept entirely to his bed. After this (Sept. 14th) his condition gradually deteriorated. The paralysis of the left external rectus became more and more marked and finally complete. Slight swelling and haziness of the optic discs were noticed on Nov. 1st. The tongue was still protruded to the left. The paralysis of the soft palate gradually became complete, with constant regurgitation of liquids through the nose. On this account he was fed through a tube passed into the stomach, as it was thought food pneumonia would otherwise inevitably follow. After withdrawing the tube, however, he used to vomit and so he incurred the same risk as before. The nasal intonation increased, the speech became thick, and the words blurred so that it became impossible to understand him. The saliva ran from his mouth and soaked his pillow. He wasted considerably. The knee-jerks entirely disappeared, but the plantar reflexes remained. No anæsthesia on the left side of the face or deafness were ever noticed. The heart's action continued regular, but gradually quickened from 84 to 120 beats per minute, at which rate it remained for some time before his death. The lungs remained quite free till about a week before his death, when bubbling râles were heard at the bases. These increased in number, and were finally heard all over the chest. Cheyne Stokes breathing was never observed. The temperature throughout the course of the disease was inclined to be sub-normal, varying from 96° to 99° F. On Nov. 13th, in the afternoon, after being fed through the tube, he vomited a considerable quantity of fluid. Some of this got into the air-passages, for he became extremely cyanosed and short of breath. He was put on his side and given oxygen to inhale, when some slight improvement followed. He was then fed entirely with nutrient enemata. The improvement, however, was only temporary, for both the pulse and respiration quickened, the temperature rose to 102°, and at 1 A.M. on the 14th he died.

Necropsy.—At the post-mortem examination the bones of the cranial vault were found to be considerably thinned in places. The brain weighed 50 oz. and the convolutions on both sides were flattened; this was due to the distension of the ventricles with clear cerebro-spinal fluid. There was a lobulated tumour as large as a Tangerine orange growing from the anterior surface of the basilar process about the junction of the basi-occipital and basi-sphenoid bones. A longitudinal section of the bone showed that the tumour was sub-periosteal and that it did not expand the basilar process. The growth was covered over by the dura mater and had not perforated it in any place. The tumour was white on section and grated under the knife; it presented the appearance of a cartilaginous tumour undergoing calcification; microscopically it was a chondrifying and calcifying sarcoma.

[1] Gowers: Diseases of the Nervous System, second edition, p. 499.

The pituitary body and fossa were quite natural. The basi-sphenoid and basi-occipital bones were firmly united by bone. The tumour indented the pons and the medulla and markedly flattened them on the left side. The fifth nerve on the left side was flattened; the left sixth nerve was pressed upon; while the seventh and eighth nerves on that side were in immediate contact with the tumour. The glosso-pharyngeal, vagus, spinal accessory, and hypoglossal on this side were surrounded by an extension of the growth, which passed down through the left jugular fossa to get behind the upper part of the pharynx. The growth did not press on the right side of the medulla or pons. There were retinal hæmorrhages on both fundi and obscuring of the disc. There was a persistent thymus, which, however, seemed to be atrophying, as shown by microscopic examination. The right lung showed broncho-pneumonia due to the entrance of food. The other organs were healthy.

Remarks by Dr. ROLLESTON.—The points of interest are in connexion with the diagnosis, treatment, and the origin of the tumour in this case. During life the diagnosis was a tumour *in* the upper part of the medulla, whereas the tumour, as has been seen, was *outside* the medulla. This error might have been obviated by bearing in mind Dr. Gowers's statement that in tumours arising from the posterior fossa of the skull the sixth nerve is paralysed without the conjugate internal rectus, which suffers with it in disease of the centre.[2] The nerves affected clinically were the sixth, tenth, eleventh, and twelfth, and the tumour was therefore thought to be in the upper part of the medulla, involving the fibres of the sixth at their exit and not affecting the nucleus of the nerve, for in that case the seventh nerve would have been affected as well. This diagnosis was made soon after admission, when there were two other factors which in my mind strengthened the localisation: they were (*a*) the absence of optic neuritis and (*b*) the sub-normal temperature. Optic neuritis may be absent in cases where the tumour is situated in the medulla. Dr. J. M. Martin has most kindly communicated to me the following figures bearing on this point. In 41 cases of tumour of the pons and medulla there was no optic neuritis in 14, or 34 per cent., while in 9 of these 41 cases in which the tumour was situated either low down in the pons or in the medulla, optic neuritis was absent in 5. A tumour irritating the meninges would be more likely to give rise to optic neuritis, and, as has been seen, papillitis did occur two weeks before death in this case. With regard to the sub-normal temperature, I had heard of two or three cases of tumour in the medulla in which this feature was noticed, and its presence in this case seemed to confirm the diagnosis.

With regard to other points the clinical symptoms were less widely spread than the lesions found post mortem rendered probable; thus there was no definite facial paralysis or deafness, and though there was headache it was not localised to the fifth nerve on the left side, and there was no anæsthesia on that side of the face. Pressure on the pons eventually gave rise to loss of power in the legs, but there were no convulsions; the loss of knee-jerk which developed was probably due to the cerebellum being compressed under the tentorium by the upward growth of the tumour. As regards treatment, iodide of potassium was tried on admission, but without any result, and as there was no evidence or history of any specific taint it was, after a fair trial, abandoned. A tumour that appeared to be in the medulla was in too dangerous propinquity to the vagus and the all-important vital centres to encourage any idea of operative interference, and we had therefore to be content with relieving pain and sleeplessness, which the combination of ten grains of phenacetin and fifteen grains of sulphonal very successfully achieved. The tumour during life was, from the absence of any sign of syphilis, the failure of iodide of potassium to relieve the symptoms, and from the age of the patient, thought to be either gliomatous or tuberculous. As shown at the post-mortem examination, it was a chondrifying and calcifying sarcoma growing from the surface of the junction of the basi-sphenoid and basi-occipital. These two bones normally join at about the age of twenty-one years; in this case they were firmly united by bone, no trace of the junction being visible. This premature union was perhaps associated with the riotous proliferation which gave rise to the sarcoma. It is possible that this growth arose from some relics of the primative parachordal cartilages, but as it did not expand the bone and was sub-periosteal and not endosteal there is not much to support this suggestion. There were no signs of cretinism, but it is interesting to note that together with this premature ossification between the basi-sphenoid and basi-occipital there was a persistent thymus, which, however, showed signs of atrophying. A persistent thymus is found, according to Marie,[3] almost constantly in cretinism (infantile myxœdema). Possibly this case was one in which cretinism remained entirely latent, although there were some anatomical evidences of it.

[2] Disease of Nervous System, 1888, vol. ii., p. 480.

ENGLISH MISSION HOSPITAL, JERUSALEM.

A CASE OF LARGE CONGENITAL SCROTAL HERNIA; RADICAL CURE; RECOVERY.

(Under the care of Mr. ERNEST W. GURNEY MASTERMAN.)

CASES of radical cure of all kinds of hernia are now so common that only those of special interest claim notice in "the Mirror." The reason for recording the following case is the very large size of the hernia. Perhaps, also, the fact of its being of the congenital variety may add to its interest.

A Moslem boy, stated to be twelve years of age, but, if so, very ill developed, was admitted to the English Mission Hospital, Jerusalem, on April 20th, 1894, with a large right inguinal hernia, which his mother stated he had had all his life. It was quite irreducible and had lately increased in size. The great weight of the mass in the scrotum made the boy's life a burden, and both he and his mother were most anxious for any treatment which would end this misery. When admitted his general condition was fairly good for a native. There was no other sign of disease. The bowels acted fairly regularly and there was no vomiting. The note of the local condition, taken at the time, was as follows: "Passing down the right inguinal canal and distending the scrotum to the size of two fists, when held together, is a large hernia. It can on manipulation be very slightly reduced, and when the state of extreme distension is removed the contents appear to be partly omentum and partly intestine. A distinct circular hard band feels to be undoubtedly omentum." (At the operation it proved to be a loop of altered small intestine). On the 24th the patient was put under chloroform and an attempt at reduction was made without success. On May 1st, with the assistance of Dr. P. D'E. Wheeler, Mr. Masterman performed the following operation. The patient, having been previously prepared by a purge and enema, was put under chloroform. After thorough antiseptic cleansing of the parts an incision was made about four and a half inches long from about half an inch above the site of the external abdominal ring to nearly the bottom of the scrotum. The peritoneal sac was opened on a director and the contents were found to be six coils of small intestine, normal in appearance except one coil, which was much reduced in calibre, and was empty and hard. Behind these lay a large mass of large intestine, including the cæcum with the vermiform appendix, the ascending and the transverse colon. To this last was attached the great omentum, the whole of which was in the hernial sac. The small intestine was soon reduced, but the mass of large intestine was so matted together that its reduction was a matter of great difficulty. The appendices epiploicæ were large and contained much fat. As the omentum was normal and not abnormally drawn into bands it was not thought advisable to remove any of it. After twice carefully slightly enlarging the incision upwards the whole mass was at length reduced. During these manipulations the intestines were as far as possible kept warm by means of sponges wrung out in warm carbolic lotion. After the reduction, the neck of the sac (which was large enough to admit three fingers together) was closed in the following way: Three salmon-gut sutures were passed transfixing the sac, each one deeper—i.e., posterior to—the others, and all were knotted above one another above the neck. Then a stout silk ligature was passed still deeper than—i.e., posterior to—all these, and in its passage across the inside of the neck included part of the floor—i.e., posterior surface—of the neck. When this was tightened up it was found that there was a small space left large enough to admit the tip of the little finger. A further suture was

[3] Bulletin et Mémoires de la Société Médicale des Hôpitaux, Paris, 1893, p. 136.

then passed deeply completely round the sac outside its coats, and this being tightened the sac was closed. A special effort was made to avoid including the spermatic cord in these sutures, even although the testis on that side was very ill developed, being much smaller than the one on the other side. The sac being closed, a considerable portion of the tunica vaginalis was dissected away, but considering the state of the testis it did not seem to be worth while spending more time in suturing together a new tunica vaginalis testis. A large piece of the scrotum, 4½ in. by 2 in., was then removed. The long wound was then carefully sewed up with salmon-gut sutures and a small drainage-tube was inserted at its lowest point. On the 2nd the patient had had a fair night, there had been no vomiting after the chloroform, and the temperature at 6 A.M. was 100·3° F. and at 6 P.M. 103°. He was fed on nutrient enemata. Sips of hot water only were given by the mouth. On the 3rd he was doing well. Nourishment as above was given. A little hot milk by the mouth, a teaspoonful at a time, was added. The bowels acted naturally; there was no abdominal tenderness. The temperature at 6 A.M. was 102·4°, and at 6 P.M. 104°. The wound was dressed; two stitches were removed; there was slight suppuration at the upper end and a boracic fomentation was applied to that part. On the 4th there was free discharge, the remaining stitches were removed, and the temperature was 100·6°. After this the temperature became normal and ordinary feeding was resumed. There was a somewhat free discharge of pus from the whole length of the wound; but on July 10th the patient left the hospital with a very firm consolidated scar in the site of the wound and the scrotum only slightly larger than normal.

Remarks by Mr. MASTERMAN.—From the point of view of antiseptic surgery this free suppuration might be regarded as a failure, though, so far as I have seen, it is very common in all hernia operations of any size involving scrotal tissues; but practically it led to the formation of a very much more hopeful and satisfactory scar than could have occurred had all closed by "first intention." I have made every endeavour to see my patient again of late, but he cannot be traced; yet the fact that he has neither come to me nor to the English practitioner at Nablous, where he lives, makes it almost certain he is going on satisfactorily without recurrence.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Parasite of Malarial Fevers at Sierra Leone.—Pulsating Empyema.

A MEETING of this society was held on March 23rd, the President, Dr. HOWSHIP DICKINSON, being in the chair.

Surgeon-Captain C. W. DUGGAN read a paper on the Parasite of the Malarial Fevers at Sierra Leone. He described the symptoms of the severe malarial fevers which prevail at Sierra Leone, and gave the results of his observations on the parasite of malaria which is associated with these fevers, from which both Europeans and natives suffer. During two years' residence there he examined blood from the finger in nearly 400 cases and made special study of 50 cases. Eleven of these cases were given in some detail in the paper. His description of the symptoms which usher in and last during the attack did not differ materially from that given by previous observers. In all the cases he found parasites in the blood from the finger. The form in which they were seen was as a very minute ring-shaped body, which in a later stage slightly enlarged, and contained a few very minute grains of pigment. A more advanced stage than this was not observed in the freshly drawn peripheral blood, with one or two exceptions. In blood taken from the surface of the brain in a fatal case he found sporulating forms. The parasite is very small, and even in the sporulating stage only takes up about a third of the red corpuscles. He counted five spores in one parasite. In the majority of cases, after some days' fever, the crescent forms of the parasite were observed, and he described various stages in its development. In one case only did he observe appearances in the parasite which could be interpreted as being possibly due to spore formation. In all the cases observed by him the tertian parasite was observed once only. This occurred in a man who had suffered from malarial fever two years previously in the West Indies. The quartan parasite was never observed. All the appearances observed were analogous to similar appearances described by Marchiafava as being found in the summer-autumn fevers of Rome, and morphologically Surgeon-Captain Duggan was not able to detect any difference between Marchiafava's parasite and that of Sierra Leone. The crescent body in shape and size resembled that described by Laveran and the Italian authors. In dried and stained preparations of the small parasite in the finger blood a deeply stained nucleolar body could sometimes be observed at one point in the periphery; at other times in the centre of the parasite surrounded by an unstained zone, whilst the periphery stained; sometimes two such nucleolar bodies could be observed. In the stained preparations the very fine pigment was observed on the periphery of the parasite.—Dr. THIN remarked on the importance of a microscopic examination, and mentioned a case in which there was no fever, but in which by careful searching Surgeon-Captain Duggan established the diagnosis by demonstrating the malarial parasite. The fevers on the west coast of Africa were extremely fatal as compared with those in the south of Europe, and this appeared to be due to a plurality of parasites. As illustrating the danger to Europeans he mentioned an instance in which four out of five artisans died from fever almost immediately after arrival in the country. One of them was attacked on the second day, showing an unusually short period of incubation. Death occurred on the fourth day. The regular administration of quinine had a most remarkable protective effect.—Dr. MANSON drew attention to the previous work of Plehn in the Cameroons, which pointed in the same direction. Microscopic examination was of the utmost importance for purposes of diagnosis, as many of the cases now known to be instances of severe malaria would formerly have been returned as cases of sunstroke. He regarded the practice in the army of discharging men from hospital after three days' treatment as quite inadequate, as observations showed that the parasite recurred in the blood at the end of a week. Patients should be retained in hospital for two or three weeks until the parasite had entirely disappeared from the blood, and if the presence of the parasites was persistent the patient should be deported from the country. He was surprised that reference was only made to the crescentic forms, as the flagellated forms could easily be produced by placing the cover-glass with the film of blood in a damp cell made with a piece of wet blotting-paper. With reference to transmission of the parasites by means of mosquitoes, he pointed out that the transference was not direct, as the mosquito did not suck blood more than once. He believed that this insect was the host in which the parasite developed, and he had specimens demonstrating the presence of the flagellated form of the parasite in its stomach.—Surgeon-Captain DUGGAN, in reply, said that he had no doubt that flagellated forms would have been obtained in his cases by keeping, but he did not see any in freshly drawn specimens. He could hardly regard the mosquitoes as essential for the conveyance of the parasites, as they were not numerous in the fever-stricken districts on the west coast, and then only appeared for a short period in the year.

Dr. SAMUEL WEST read a paper on Pulsating Empyema. Distinct pulsation in empyema was of two kinds: (1) A general shock, usually communicated to a considerable area of the chest wall—intra-pleural pulsation, as it has been called; and (2) expansile pulsation localised in an external tumour—extra-pleural pulsation. In either case it is usually on the left side, synchronous with the heart, and almost invariably systolic in time. It is most frequent in males and in adult life, but may occur in either sex or at any age. Similar pulsation has been described with serous effusion and pyo-pneumothorax. Intra-pleural pulsation is usually palpable only—and rarely visible—over a considerable part of the side. When localised to the upper intercostal space it is probably like the fluctuation of ascites, and due to a surface wave, and is met with only where the effusion is large, the diagnosis presenting no difficulty. If felt near the sternum or near the heart the question of aneurysm might arise. Pulsating pneumonia and intra-thoracic growth have been mentioned as causing difficulty in diagnosis, but both these

conditions are very rare. Extra-pleural pulsation is met with in empyema only when pointing. Its seat is usually near the heart. There may even be two or more external tumours, all of which pulsate. Such pulsating empyemata have been met with in strange places—e.g., the loin. The diagnosis is but rarely a matter of difficulty. It is with aneurysm that these cases are most likely to be confused. In one case the pulsating tumour was in the third left intercostal space, and after being regarded and treated as an aneurysm for three years burst and disappeared. Localised empyemata near the heart do not necessarily pulsate, however, nor need aneurysms do so. The difficulties of diagnosis are greater between a local abscess in the chest wall which pulsates and an aneurysm than between an aneurysm and a pulsating empyema. Puncture with a fine needle could do no harm even in an aneurysm and would at once settle the diagnosis. There are three different kinds of pulsation in empyema, and the same explanation will not fit all :—1. The general shock with large effusions, probably the same as that occasionally felt through a solid growth or even a massive pneumonia, and is a shock rather than a pulsation. 2. The wave-like pulsation, often limited to one or two of the upper intercostal spaces in front, probably a surface wave like the so-called fluctuation in ascites. 3. The distensile pulsation, like that obtained in a large abscess, and for this it is necessary that the fluid should be contained within more or less resistent walls and be under some tension, and usually thickening and rigidity of the lung and mediastinum are found post mortem in such cases. Pulsating empyemata are usually said to be fatal, and this statement is approximately true when the pulsation is distensile. The prognosis is so bad, not because the empyema pulsates, but because the peculiar conditions requisite for pulsation—viz., the fixation of the heart and the changes in the mediastinum and lungs—are such as prevent recovery. Of the other cases the majority recover when treated in the usual way.

MEDICAL SOCIETY OF LONDON.

Intestinal Anastomosis.—Senile Decay.

A MEETING of this society was held on March 22nd, the President, Mr. REGINALD HARRISON, being in the chair.

Mr. HARRISON CRIPPS read a paper on three cases of Intestinal Anastomosis. The first was one of end-to-end anastomosis of ileum to ileum in a young woman in whom obstruction followed abdominal section for hysterectomy. A temporary enterotomy was performed, and ten weeks later the bowel was divided just below the obstructed portion and again just above the enterotomy opening, the ends being carefully sutured. She recovered, and now, three years after the operation, was in excellent health and well nourished. The second case occurred in a man, fifty-five years of age, who was operated on at his urgent request for a tumour which was found to involve the transverse colon, the omentum, and a coil of the ileum. The growth was removed and the large and small intestines were sutured, but death occurred on the fifth day, probably from septic peritonitis. The third case was that of a woman, twenty-three years of age, suffering from intussusception. Her condition precluded any prolonged operation, and a temporary enterectomy was performed as low down in the ileum as possible. On the eighth day the opening was blocked by a foreign body, which proved to be the intussusceptum which had sloughed. After a time some of the motions passed by the rectum, but the bulk escaped through the artificial opening, and if this was closed by a plug the abdomen became distended and symptoms of obstruction recurred. The patient became greatly emaciated, and it was urgently necessary to establish free communication with the large intestine. A firm plug was therefore placed temporarily in the existing opening, in order that the skin might be thoroughly cleansed, and the abdomen was then re-opened nearer the middle line, without disturbing the adhesions of the existing opening, and a lateral anastomosis was made between the commencement of the ascending colon and the lowest part of the ileum available. The fact that the intestines were no longer distended greatly facilitated the operation. The patient was now in good health, but there was a small fistulous tract at the site of the original enterotomy wound. Mr. Cripps spoke strongly in favour of trusting to careful stitching, and said that he was more than ever disposed to regard bobbins and buttons as incomparably inferior and as the cause of otherwise avoidable deaths.—Mr. LOCKWOOD said that he had seen double enterectomy performed in one case, in which death occurred not from shock but from leakage at both lines of junction. The most favourable site for operation was the small intestine, because the contents there were fluid and the movements of the gut were less forcible. He questioned whether advantage was gained by removal of a wedge of mesentery. With regard to the method of uniting the bowel, he preferred end-to-end suture to lateral anastomosis. He agreed that it was advisable where possible to relieve the distension by a preliminary operation, but he quoted cases to show that distension need not prevent the surgeon from operating where the symptoms were urgent. The condition of the patient was of great importance, as he believed that intestinal paralysis was much less likely to occur in persons who were strong and vigorous.—Mr. MARMADUKE SHEILD asked for details of the method adopted by Mr. Cripps to obtain anastomosis by lateral approximation. He himself was in favour of dispensing with any apparatus and trusting to the fingers and silk sutures.—Mr. L. A. BIDWELL asked for details of the method of end-to-end anastomosis. In employing Maunsell's method he had found that supplementary Lembert's sutures were required. He had seen one of his cases of end-to-end anastomosis two and a half years after operation, and there was no sign of stenosis.—Mr. G. WALLIS remarked that if a large wedge of mesentery was removed there was apt to be gangrene of the gut.—Mr. CRIPPS, in reply, could not agree that there was any greater risk or difficulty in the long run in operating on the large as compared with the small intestine. He had long discarded Maunsell's method as tedious. For end-to-end suturing he employed Lembert's sutures, inserting the needle a quarter of an inch from the cut end, and taking in an eighth of an inch of peritoneum and muscular coat only, ten or twelve sutures being inserted to the inch. In performing lateral anastomosis he first passed sutures to unite the coils of intestine near their mesenteric attachments ; these sutures were then drawn tight to seal off the posterior line of attachment. Sutures were next drawn through the anterior line of attachment, but they were not tightened until a longitudinal incision had been made in both coils of intestine. He never used Murphy's buttons.

Dr. T. D. SAVILL read a paper on Senile Decay, its Causes and Treatment. The paper was based chiefly on 409 cases of death in persons of sixty years of age and upwards observed during the seven years that Dr. Savill was medical superintendent of the Paddington Infirmary, the inquiry having been begun in 1887. The first part of the paper dealt with the normal and abnormal symptoms of old age, among the former being weakness, nervous symptoms, the senile heart, the senile pulse, and various external signs, among the latter being "senile vertigo," "senile epilepsy," and, lastly, conditions attended with high arterial tension. These conditions he considered dependent upon certain changes occurring chiefly and uniformly in the muscular coats of the arteries, and he referred to communications already made by him on the subject showing this condition of "hypermyotrophy" to be independent of renal disease. Dr. Savill next considered the characteristics of disease as it occurred in aged persons. Pneumonia took the leading position as a cause of death, with 17 per cent ; then cancer, 15·5 per cent. ; then bronchitis, 11 per cent. ; then "senile decay," 9 per cent. ; then contracted granular kidney, 6 per cent. ; and pulmonary tuberculosis, 5·5 per cent. The figures showed that tubercle was not so rare in the aged as was generally believed. He concluded by pointing out the importance of the early recognition of high arterial tension and of its treatment by appropriate remedies. Nitro-glycerine was of great value in the treatment of the pathological degree of the arterial change—a point supporting his contention that it was the muscular tissue which was at fault. A large number of photographs, pulse-tracings, and microscopic specimens were shown.—Dr. CLIFFORD ALLBUTT said that he was not prepared to admit that the changes described by Dr. Savill were physiological and incidental to old age. In many old people no change could be made out in the radial artery, and the blood-pressure was low. But he thought that there was a malady common in old age, of which some of Dr. Savill's cases were instances, in which the advance of years was accompanied by increase of blood-pressure. Some of the subjects were pale and sallow, others were florid. He had

described these cases clinically under the title "senile plethora." There was usually a train of nervous symptoms, melancholia, insomnia, vertigo, bewilderment, syncope, and the like. The cause of this increase of tension was very difficult to determine. The urine showed no alteration, the urea and uric acid when estimated being found to be present in normal amount. There was usually some enlargement of the heart, so far as could be estimated by percussion. The ventricle was not emptied at each systole, and tended to become dilated and afterwards hypertrophied.

CLINICAL SOCIETY OF LONDON.

Thrombosis of the Veins of Galen after Scarlet Fever.—Sclerema Neonatorum. — Peripheral Hyperostosis. — Urobilinuria following the administration of Trional.

A MEETING of this society was held on March 12th, the President, Dr. BUZZARD, being in the chair.

Dr. E. W. GOODALL related a case of Scarlet Fever in which death was due to spontaneous thrombosis of the veins of Galen. The patient was a girl, eight years of age, who was admitted into the Eastern Fever Hospital with a moderately severe attack of scarlet fever. On the evening of the eleventh day, when apparently convalescent, she was seized with a succession of general convulsions, which after a few hours gave rise to more or less general rigidity and gradually deepening coma. There was pyrexia, the temperature rising shortly before death to 107·4° F. The pulse was very frequent. There was no optic neuritis and the urine was free from albumin during the whole of the illness. At the necropsy there was ante-mortem clot in the veins of Galen and in the straight sinus. The clot was hardly if at all adherent. Both choroid plexuses were covered with a thick layer of recent lymph. The optic thalami were in a condition of red softening, the left being almost diffluent. Beyond slight ulceration of the tonsils there was no other lesion. There was no middle-ear disease. The case was brought forward on account of its rarity, as when spontaneous thrombosis occurs after a specific fever it is usually located in the heart or one of the vessels of the lower extremities. A case similar to this was brought before the society in 1896 by Dr. Lee Dickinson, but in that case no cause for the thrombosis could be found.—Dr. COUPLAND related a case that he had seen with Dr. F. P. Wightwick, in which a young woman, who, when convalescent from an attack of measles seventeen days after the onset, became strange in her manner and passed urine and fæces under her. Next day she had intense headache and became semi-comatose, the left arm was flexed and a little rigid, but the other limbs were flaccid. The knee-jerks could not be obtained. There was albumin in the urine, and her temperature, which was 104° when first seen, rose to 108° before death. Thrombosis of the sinuses was diagnosed, and at the necropsy ante-mortem clot was found in the straight sinus. There was red softening of the optic thalami and a small area in the crus. There were no convulsions during the illness.—Dr. LEE DICKINSON said that in the majority of cases the patients were chlorotic. A few had occurred in association with pneumonia and with the puerperium. They are primarily dependent on the condition of the blood and not to phlebitis. The recent work of Wright and others led him to hope that they might ultimately be able not only to recognise undue coagulability of the blood, but to remedy it and prevent thrombosis.—Dr. GOODALL, in reply, said that his patient was not particularly anæmic. The case had run an ordinary course, and no examination of the blood had been made.

Dr. GARROD related a case of Sclerema Neonatorum in a male infant, the child of healthy parents, who were not in specially bad circumstances. Three or four days after birth patches of induration of a purple colour were noticed on the buttocks. When first seen, at the age of seven weeks, the child was well nourished and showed no constitutional symptoms, and there was no depression of temperature, which was taken on seventeen occasions, and varied from 100° F. to normal. Areas of scleremateous induration were situated over the buttocks, thighs, back, and deltoid regions, and there were a few outlying islets in other situations. The skin over the buttocks had a pink tint. The induration was massive, and the legs could not be extended at the hips. There was nowhere any pitting on pressure. The distribution of the sclerema was very symmetrical. The edges were map-like and well defined. The urine was pale, clear, and contained no albumin. The induration gradually cleared up, and recovery was complete in about five months. The treatment adopted was inunction with mercurial ointment, and later with cod-liver oil. In this case, as in one previously recorded by Dr. Garrod, the disease had evidently passed through its period of activity before the child was first seen, and this explained the absence of constitutional symptoms. In favourable cases the initial fall of temperature may be comparatively slight. The vigorous condition of the child, the absence of privations, and the fact that it was born in summer, were all factors tending to a favourable termination.

Mr. LOCKWOOD read a paper, and Dr. LEWIS JONES exhibited skiagrams, describing the case of a girl, ten years of age, suffering from Peripheral Hyperostosis, which was considered in connexion with pulmonary hypertrophic osteo-arthropathy. The hands and forearms, also the feet and legs, were much enlarged. The enlargement was mainly due to a thickening of the diaphysis of the bones of the leg. The soft parts may have been altered, the legs being œdematous. The girl had a sharp angular curvature of the spine in the dorsal region, but no abscess. The lungs were catarrhal at the base, and dulness at the apex indicated tubercle. Both the upper and lower extremities were enlarged. The fingers were clubbed with flat and spade-like ends. The phalanges and metacarpal bones were much thickened at the thin part of their shafts. The ends and joints seemed quite normal. The ulna and radius were also thickened. The legs were œdematous, but the lower end of the tibia and fibula and the bones of the foot and knee were much thicker than usual. The photographs showed an actual hyperostosis. The various bony thickenings seemed quite painless and without evidence of inflammation. There was impaired resonance and crepitations at the apices of the lungs. The absence of any joint affection seemed to separate this case from others of so-called pulmonary hypertrophic osteo-arthropathy. Thickening could hardly be due to periostitis. It was analogous, he thought, to the thickening on the concavity of the shaft of the bone sometimes seen in rickets.—Mr. MAKINS had seen a somewhat similar case in a girl aged twelve years, who had a dorsal curvature and big hands and feet resembling those in acromegaly. In his case, however, the skiagraphs did not show any change in the bones. He thought that the change in the phalanges resembled that in intra-uterine rickets.—The PRESIDENT asked if there had been any special treatment which accounted for the improvement. He thought that the case ought to be classed with hypertrophic pulmonary osteo-arthropathy rather than with acromegaly. Although the bones of the hand were thickened, the hand as a whole was not increased in width as in acromegaly, and the spinal curvature was lower than was usual in that complaint. There was hyperextension of the distal phalanges, as in Marie's description, but there did not appear to be the usual changes in the nails.—Dr. KINGSTON FOWLER drew attention to the clubbing of the fingers and asked if there were any signs of bronchiectasis. He referred to a case in which there were enlargements of the metacarpo-phalangeal joints and great clubbing of the fingers, in which at the necropsy the mischief proved to be extra-articular, and in which the clubbing entirely disappeared after death.—Mr. LOCKWOOD, in reply, said that there had been changes in the nails, but that they had disappeared as the child's health improved. He attributed the improvement to her removal from miserable surroundings and to good food and nursing. As the joints did not appear to be implicated in this case he preferred to call it "hyperostosis" rather than osteo-arthropathy.

Dr. ROLLESTON showed a case in which Excessive Urobilinuria followed and apparently depended on the Administration of Trional. The patient was a woman, aged fifty-seven years, who for two years had suffered from dropsy, "jaundice," and progressive shortness of breath. On admission she had a dilated heart, slight œdema, and a dirty yellow skin. There were purpuric patches on the thorax and abdomen. The urine was highly coloured, but contained no bile, nor was there any albumin. On the evenings of Nov. 2nd, 7th, and 9th twenty-grain doses of trional were given. On Nov. 9th the urine was of a deep orange colour, and as the possibility of hæmato-porphyrinuria due to trional suggested itself the administration of the drug was stopped. Dr. Buckmaster examined the urine spectroscopically, and found no trace of hæmato-porphyrin, while urobilin was present in excess, as shown by the

fact that after dilution a well-marked band of urobilin was seen. The urine remained of this peculiar colour, though gradually diminishing in tint, until death on Nov. 17th. On Nov. 13th the temperature began to go up and delirium set in, which lasted until death from exhaustion. At the necropsy there was a localised empyema beween the lobes of the right lung, a dilated heart, and a "nutmeg" liver, which was not cirrhotic. It appeared probable that the patient had for some time been subject to urobilin jaundice, the source for excessive urobilin being the purpuric patches and the "nutmeg" liver, and that the trional brought about an increase in the urobilinuria. Urobilin and hæmato-porphyrin were closely allied, while sulphonal and trional resembled each other both chemically and physiologically. Sulphonal was known to give rise to hæmato-porphyrinuria. It seemed reasonable to believe that trional would give rise to excessive urobilinuria and that it would be specially liable to do so when there was excessive chronic venous congestion of the liver.—Dr. A. E. GARROD thought that hæmato-porphyrinuria did not necessarily imply excessive hæmolysis. In cases of profuse hæmato-porphyrinuria after sulphonal, examination of the blood did not show any active hæmolysis, but appeared to be due to an alteration of bilirubin by a special intestinal organism. Urobilin, on the other hand, was associated with increased hæmolysis and was hence increased in pernicious anæmia, in which hæmato-porphyrin was only present in the normal trace. It was also present in increased amount in cases of "nutmeg liver."

HARVEIAN SOCIETY OF LONDON.

Some Common Troubles following upon Childbirth.

A MEETING of this society was held on March 18th, Dr. MILSOM being in the chair.

Dr. BOXALL read a paper entitled Some Common Troubles following upon Childbirth. The chief facts relating to the mortality from puerperal fever were fully stated as statistics and illustrated by means of charts. Puerperal fever had not diminished in the past fifty years, but rather increased, especially in the provinces. In the practice of the General Lying-in Hospital during the "antiseptic period" (1879–1896) the mortality had been greatly diminished, and in all cases where the patient had been under hospital treatment throughout, not only had the mortality been diminished, but septicæmia had been eliminated and the death-rate had been lessened below that of private practice. Similarly satisfactory results had been obtained at other lying-in hospitals at home and abroad. Stress was laid on the superiority of perchloride of mercury solution as an antiseptic and on the details of its use. Dr. Boxall had found numerous cases of subinvolution, retroversion, laceration of the cervix, &c., in patients leaving the lying-in hospital, conditions requiring treatment being found in 56 out of 200 patients examined. He therefore recommended the routine examination of all patients before attendance ceased.

Dr. CULLINGWORTH bore testimony to the great value of the statistics collected by Dr. Boxall and also to the value of antiseptics, and dwelt on the results that had led to the discontinuance of "salufer" as an antiseptic.

Dr. MORTON called attention to the soloids of the biniodide introduced by Dr. Leith Napier. They were efficient, but more hygroscopic than the perchloride. He regretted that a longer trial had not been made of "salufer" in 1888.

Mr. HAZEL asked for particulars as to the technique of the process. Does the patient lie on her side or on her back? He mentioned the case of a patient under his care who was given the injection by the nurse whilst lying on her left side, and that she was caused so much local irritation and general disturbance thereby that she said she would rather die than have the injection again in this way. Did Dr. Boxall use a straight or curved tube; and did he prefer the tube to be of glass gum-elastic, or celluloid?

The PRESIDENT observed that Dr. Boxall had made no reference to zymotic diseases in connexion with the subject. He would have liked to hear something about the effect of influenza, for he had seen two cases where the poison was very virulent, and in both instances proved fatal.

Dr. BOXALL, in reply, said that the douche was indicated before, during, and after labour. It was to be given into the vagina and not directly into the uterus, though some of the lotion entered the uterus, and should be squeezed out after douching. The dorsal position should be maintained throughout.

BRITISH GYNÆCOLOGICAL SOCIETY.

The Treatment of Inoperable Carcinoma.

A MEETING of this society was held on March 11th, Mr. MAYO ROBSON, President, being in the chair.

Mr. ARMSTRONG (Buxton) said that he had been asked to read a short paper on Dr. Beatson's Method of Treatment of Inoperable Carcinoma, but he was relieved of this duty by the presence among them of Dr. Beatson himself, who had come on the invitation of the council.

Dr. BEATSON (Glasgow), after acknowledging the invitation which he had received from the council through Mr. Armstrong, said that in his first case the mamma, axillary glands, and part of the pectoral muscle had been removed and found to be cancerous. Three months later the disease recurred, and further operation was impossible. Thyroid feeding was carried to the extent of producing a physiological effect, but in vain. The ovaries and tubes were then removed and the thyroid feeding again pushed. In little more than two months the patient had much improved; in five months the cancerous tissue had become yellow and fatty; and in six months it had gone. Now, at the end of twenty-one months, the tissues were sound and the woman was in good health. The case seemed to him to throw some light on the subject of carcinoma. He wished to specially consider three points—(*a*) the possible mode of origin of the cancer cells; (*b*) the relation of the cancer cells to surrounding tissues; and (*c*) the exciting cause of the cell-proliferation. (*a*) Did the cancer cells come from the normal epithelium of the part or had they an independent origin? The current view was that they arose from a transformation of the normal cells. But another idea was suggested by secondary growths. For instance, in the case of cancer of the liver secondary to a breast tumour they found that the breast-cells had become transplanted in the liver, whilst there was no proliferation of the liver cells themselves. Now if the liver growth had arisen from the proliferation of a cell implanted there, why might not such a process have been at work in the first place? (*b*) In a fast-growing carcinoma no bloodvessels were found; therefore, the growth must be nourished by surrounding lymph and neighbouring cells; from this he concluded that carcinoma cells must live on their neighbours. As some tissues formed better pabulum than others, the fact that some tissues were very resistant to cancer was thus explained. At the growing margin of a cancer the degenerate tissue cells testified to the parasitic action of the tumour. At the centre of the tumour, where no nourishing cells were present, the cancer cells tended to break down with a fatty, hyaline, or mucoid degeneration. (*c*). Three explanations had been given as to the exciting cause of the cell-proliferation. First, there was the recent parasite theory, which he regarded as not proven. Secondly, Cohnheim's theory was that it was due to the inclusion of epithelial cells. A third explanation was based on Goodsir's paper on Nutritive Centres, in which it was suggested that every organ had a nutritive centre in the shape of a few cells which normally disappear after they have done their work, and which if they persist may give rise to new growths. Dr. Beatson's theory was that the cancer growth was due to a return to activity of the germinal epithelium. In all cells there was a certain reproductive power which became lessened by the specialisation of the cells; but after this specialisation subsided the reproductive activity might re-awaken. It had seemed to him possible that in the case of the breast actual germinal cells might be present derived from the ovary. Further, the influence of removal of the ovaries on osteomalacia led him to think that it might be possible by the same means to influence the spread of cancer. He also employed the thyroid extract because of the well-known influence of this substance on lymph channels and spaces, by means of which the extension of cancer took place. His later cases included five cases of cancer of the breast and four of uterine cancer, but with these the results had not been satisfactory. His conclusions were, that early and wide removal of the growth was the proper treatment for cancer; if recurrence took place removal of the ovaries and tubes might be tried if the patient were young; if near the meropause he should in

addition give thyroid extract, but if secondary deposits had occurred he regarded further treatment as useless.

The PRESIDENT thought that the plan of treatment they had just heard described might be well worth a trial in certain cases.

Mr. MARMADUKE SHEILD remarked that cancer generally occurred at or about the menopause, when the ovaries ceased to be active; but he thought it might be logical to remove the ovaries in the case of younger women, especially because cancer growth was always much more rapid in such cases. He had been asked to tell them something of the method of treating cancer by Coley's fluid. His own experience with it was limited to four cases, two of carcinoma and two of sarcoma; but he had closely observed cases treated by others. Coley's fluid was a preparation derived from a cultivation of the bacillus prodigiosus; the cultivation was filtered so as to give a sterile fluid. The idea was derived from an observation by Fehleisen, that certain growths disappeared under an attack of erysipelas, an observation confirmed by others. But sometimes the reverse might occur, and he had known two cases at St. George's Hospital where erysipelas attacked a carcinoma of the breast with a fatal result. His four cases with Coley's fluid were as follows:—1. Recurrent carcinoma of the breast. He injected with three minims of Coley's fluid on three occasions, but it made the patient very ill, and she would not go on with the treatment. 2. Tumour of the breast, with a clinical character of scirrhus. The patient would not consent to operation. Electricity had been tried. He gave injections four times, with the same result as in the first case. 3. Sarcoma of the thigh. The growth increased and broke down, and masses soon appeared in the abdomen. 4. This was also a case of sarcoma. The nodules disappeared under the injections, but, apparently from necrosis, they were not absorbed. The patient died from pyæmia, and general deposits were found in the body, the organism being the staphylococcus. He was inclined to agree with the opinion of Mr. Butlin, who had found the fluid of limited use in sarcoma, but of no use in carcinoma. In Dr. Coley's last letter he limited its application to cases of spindle-celled sarcoma, a variety which was apt to retrogress, especially when inflamed. Coley's fluid probably acted by setting up inflammation, and he believed that injection of tuberculous and similar substances might have the same effect.

The discussion was then adjourned.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

THE sixth meeting of the session was held on March 10th in the medical library of University College, Dr. AUST LAWRENCE being in the chair.

Dr. B. J. BARON showed a patient with Web in the Larynx due to thyrotomy for removal of growths on the vocal cords.—Dr. P. W. WILLIAMS made remarks on the case.

Mr. MORTON showed the following patients with: (*a*) Charcot's Disease of the Hip-joint, (*b*) Subclavian Aneurysm, (*c*) Hypospadias, (*d*) Large Fatty Growth in the Thigh, (*e*) Papilloma of the Tongue, and (*f*) several Nodules on the Dorsum of the Tongue associated with General Leucoplakia.

Dr. MICHELL CLARKE showed the following patients with: (*a*) Athetosis, and (*b*) Amyotrophic Lateral Sclerosis.—Dr. E. L. FOX remarked on the cases.

Mr. HARSANT showed a specimen of Stricture of the Œsophagus in which gastrostomy was successfully performed.—Mr. FIRTH, Dr. P. W. WILLIAMS, and Dr. AUST LAWRENCE spoke on the subject.

Professor FAWCETT showed the following anatomical specimens: (*a*) Skull with Complete Absence of the Left Lateral Sinus, (*b*) Michel's Diverticulum, (*c*) Five Months' Fœtus showing the Position in its Membranes, (*d*) Brain Convolutions, &c., (*e*) Coloured Dissections mounted in plaster-of-paris, (*f*) Model of Deep Abdominal Viscera, and (*g*) Dissection of an Anencephalous Monster.—Mr. HARSANT remarked on the specimens.

Dr. NEWNHAM showed a specimen of Ruptured Tubal Pregnancy successfully operated on.—Dr. AUST LAWRENCE, Dr. W. C. SWAYNE, and Dr. J. G. SWAYNE spoke on the subject.

Dr. AUST LAWRENCE showed a similar specimen.

Mr. C. W. J. BRASHER read a paper on Division and Ligature of the Vasa Deferentia for Prostatic Hypertrophy in a patient aged eighty-seven years.—Mr. PAUL BUSH related a similar case, and Mr. MORTON discussed the operation.

Mr. MUNRO SMITH read a paper on Dislocation of the Peroneus Longus treated by Operation.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Tubercle.

A SPECIAL meeting of this society was held on March 12th, the President, Dr. GODFREY CARTER, being in the chair.

The occasion of the meeting was an address by Mr. Watson Cheyne on Tubercle, with especial reference to tuberculous joints. The address was profusely illustrated by a series of very beautiful lantern slides, showing the histological character of the tuberculous change in the tissues and also a number of sections of tuberculous bones and joints bearing specially on their surgical treatment. The lecturer, having given a short account of the history of a tubercle and the changes which take place in the tissues surrounding it, showed that only a small proportion of the affected structures contained tuberculous material, and that when this small proportion had been dealt with the merely inflamed tissues would, under favourable circumstances, regain their normal condition. He pointed out the important bearing of this fact on the surgical treatment of tuberculous joints, and condemned strongly the formal excision of joints in young people, as opposed to the careful erasion of all tuberculous material from such joints, the likelihood being that by excision the epiphyseal line would be interfered with and subsequent growth of the bone rendered impossible. Mr. Watson Cheyne touched shortly on the treatment of tuberculous joints by extension, and said that the extension was not intended to drag the bones apart, but merely to tire out the muscles, whose contraction would tend to keep the diseased surfaces in contact. He also spoke favourably of the treatment by injection with iodoform emulsion. In conclusion he expressed the very decided opinion that the bacillus was the one cause of the tuberculous change and showed a representation of typical tuberculous disease in the limb of a goat in which a culture of the tubercle bacillus had been injected into the nutrient artery of the bone.

A discussion followed, in which Mr. PRIDGIN TEALE, Dr. JALLAND, Mr. LITTLEWOOD, Professor TREVELYAN, Dr. RABAGLIATI, Mr. HORROCKS, and others took part.

About fifty members and visitors dined together after the address.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Gastric Ulcer.—Fruit of Cream of Tartar Tree.—Exhibition of Cases and Specimens.

A MEETING of this society was held on March 5th, Mr. J. W. TEALE, President, being in the chair.

Dr. BARRS reported two cases of Gastric Ulcer in young women presenting points of special interest mainly in the methods of treatment adopted. The first case was admitted to the hospital for profuse and repeated hæmatemesis; at one time the profound anæmia placed life in the most obvious danger, but at the end of four days the patient was taking scraped beef, and at the end of six days later was eating ordinary diet without discomfort. In the beginning ordinary methods of treatment had been adopted, including the use of nutrient enemata and suppositories, but these had to be abandoned at the end of twenty-four hours on account of the great distress which their use entailed and the rectal discharge which they set up. Dr. Barrs expressed the opinion that the so-called nutrient suppositories and enemata had little or no nutritive value, and stated his entire disbelief in the existence of any digestive power in the rectal secretions or contents. The chief indication for treatment in such cases as that described

consisted in the administration, either by the mouth or by the rectum or by both, of sufficient water to keep the patient free from thirst (usually a most urgent symptom in profuse hæmatemesis) and to abstain from all attempts at feeding until the patient is able to take solid food by the mouth without pain or vomiting, when well-cooked meat is probably the most valuable and most easily digested aliment. In the second case it was feared that perforation had taken place, and the abdomen was opened between the umbilicus and the ensiform cartilage, but no evidence of peritonitis could be found. The wound was closed, and the patient, surgically speaking, made an uninterrupted recovery; but she still suffered from a certain amount of pain after food and occasional vomiting, with slight hæmatemesis. The operation was justified by the signs that were present, but perhaps the occurrence of profuse hæmatemesis ought to be regarded as strongly negativing the likelihood of perforation at the same time.

Dr. SHARP showed a specimen of the Fruit of the Cream of Tartar Tree from the Transvaal, and said it was stated in text-books that the cream of tartar tree was Adansonia Gregorii, a native of Northern Australia, but it was not possible to say, in the absence of leaves, &c., whether his specimen belonged to this species or to Adansonia digitata, which is a native of Africa, and is called the baobab, monkey bread, or Ethiopian sour gourd. The fruits of both Adansonia digitata and Adansonia Gregorii have a very similar composition. The extract of the leaves of the former evidently contains an agent which checks excessive perspiration, the pulp of both species is employed as a remedy in dysentery, and the juice expressed from the pulp is used as a drink in the fevers which prevail in the districts. Two German observers found tartaric acid and cream of tartar in the pulp, but there seems some doubt as to the species, while an English observer, whose specimen was also doubtful as to species, found chiefly acid malate of potassium. Dr. Sharp said he owed the specimen to the kindness of Mr. Richard Reynolds.

Dr. HELLIER showed a case of Tetany in a woman, aged twenty-nine years. Five years ago, when near the end of her second pregnancy, labour was brought on by a fright. Since then she had suffered at frequent intervals from attacks of painful tonic contractions of the wrists and elbows, the fingers being extended and adducted. The attacks last eight or nine hours, and she is rarely free for two or three weeks. The flaccid muscles contract on percussing the facial nerve (Chovstek's symptom).

Dr. BRONNER showed a Knife in shape resembling a sharp-edged ophthalmic tenotomy hook with a probe point, which he used for slitting up tonsils, the probe end being inserted into the distended follicles.

Mr. LITTLEWOOD showed an old case of Trephining. The patient was a male, aged nineteen years. In June, 1893, he was trephined over the left Rolandic area a month after a fracture of the vertex. He made a good recovery, and did hard work until June, 1896. He then fell ill with vomiting, headache, nystagmus, and weakness on the right side, and was under medical treatment until January, 1897. As he made no improvement and appeared to vomit everything, an operation was decided on. Mr. Littlewood turned down the old flap and exposed the trephine opening; it was about two inches in its longest diameter, and was closed with firm fibrous tissue. This membrane was cut through near the bony margin except at the lower part, and separated from the brain, to which it was adherent over an area of about one and a half inches in diameter, and replaced without stitching, so as to allow the brain to bulge through the opening. The scalp flap was stitched over this. The patient made a good recovery, and has not vomited since the operation. Mr. Littlewood remarked that it was difficult to understand why the operation had succeeded in such a remarkable way.

The following cases and specimens were also shown:—

Dr. NUNNELEY: (1) Case of Optic Neuritis, and (2) case of Pulsating Exophthalmos.

Dr. TREVELYAN: (1) Tremor of the Right Arm, and (2) Sections of Cerebral Tumour.

Mr. LAWFORD KNAGGS: Cæcum and Appendix, the latter having sloughed.

Dr. CHURTON: (1) Case of Enlarged Spleen, and (2) case of Syphilitic Spinal Meningitis.

Dr. WHITEHEAD: Microscopical Preparations of (1) Sarcoma of the Choroid, and (2) Glio-sarcoma of the Retina.

MIDLAND MEDICAL SOCIETY.

Mediastinal Tumour.—Resection of Colon.—Spinal Caries.

A MEETING of this society was held on March 3rd, the President, Dr. A. H. CARTER, being in the chair.

The PRESIDENT showed a case of Mediastinal Tumour in a man aged fifty-five years. The sole pressure signs were intense venous hyperæmia of the head and face, coupled with prominence of the superficial veins of the neck and the arms, more particularly the right arm. The diagnosis lay between aneurysm and tumour; if the latter, probably lympho-sarcoma.

Mr. F. MARSH showed a woman, aged thirty-two years, who was admitted into the Queen's Hospital, Birmingham, on July 22nd, 1896, for Chronic Intestinal Obstruction of five months' duration, which, however, had been complete for ten days. The abdomen was tympanitic and very tender to manipulation. Nothing definite could be detected by external, rectal, or vaginal examination. Enemata having failed to give relief, an exploratory opening was made in the middle line of the abdomen on July 24th, and a constricting growth was felt in the upper part of the sigmoid colon. The median incision was therefore closed and a second was made in the usual site for iliac colotomy. With a little difficulty a loop of the sigmoid colon with the part involved was brought out through the wound, and fixed, after the manner first described by Mr. Marsh in 1890, by passing a glass rod through the meso-colon. The following day a small opening was made in the colon above the constrictions to permit the escape of flatus and liquid fæces, and on July 31st the whole of the protruding loop with the growth was removed with the thermo-cautery. Owing to the yielding of adhesions in the lower angle there was after the final severance smart hæmorrhage from a large mesenteric vessel, which was stopped by pressure forceps left on to prevent the lower segment of colon from slipping back into the abdomen. The patient made a rapid recovery and left the hospital eighteen days later with a very satisfactory artificial anus. The growth was a large annular adenoid carcinoma. As the patient was in a collapsed condition at the time of the operation, and the abdomen and intestines were greatly distended, Mr. Marsh thought it wise to wait for a few months before performing an intestinal anastomosis. On Nov. 10th the patient was re-admitted, and on the 20th an elliptical incision was made round the artificial anus, which had become much contracted and indurated, and the tissues with the ends of the colon were excised. The lumen of the lower segment had considerably diminished from disease, and there was little difficulty in inserting the largest size Murphy's button, which was used to approximate the two ends. There was no recurrence either locally or in the abdominal glands. The button was felt in the rectum and was extracted on the eleventh day. The patient steadily gained weight after the colectomy and had no difficulty with the action of the bowels since the anastomosis. She is now in robust health.

Mr. JORDAN LLOYD read a paper on Practical Observations on the Symptoms, Diagnosis, and Treatment of Spinal Caries. He referred to the variability of the cardinal symptoms and deformity, rigidity, and pain in the several regions of the spine, and described the best methods of examining the vertebral column in its different parts. He thought that Sayre's plaster-of-paris support gave the best results in the majority of cases, and insisted on the advantage of recumbency as far as was consistent with good general health in all cases. He thought chronic abscesses were best left alone until they came quite near to the surface, and referred to a series of cases of laminectomy for paraplegia attended with the best results.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held on March 11th, the President, Mr. RECKLESS, being in the chair.

A letter from Lord Lister in acknowledgement of a resolution of the society congratulating him on his elevation to the Peerage was read and ordered to be entered on the minutes.

Dr. PORTER showed: (1) A case of Lead Poisoning with

fine general tremor like that of disseminated sclerosis; and (2) a case of Lateral Sclerosis.

Dr. BURGESS showed: (1) A case of Syphilitic Laryngitis; and (2) two cases of Muscular Atrophy.

Dr. ANDERSON demonstrated the method of Serum Diagnosis of Typhoid Fever. He showed under microscopes (1) a hanging drop culture to which serum from a patient suffering from typhoid fever was added; and (2) a similar hanging drop culture to which serum from a healthy person was added. He referred to the researches of Pfeiffer, Gruber, and Durham, and pointed out the bearing of their observations on the later work of Widal and Grünbaum. He described the microscopic and macroscopic methods of observing the re-action, and showed capillary tubes illustrating the latter method. He insisted on the necessity of avoiding contamination in the collection and examination of the blood, and thought it was always better to obtain a clear serum, which was most easily done by collecting the blood in sterilised pipettes and blowing it into a sterilised test-tube, as Durham suggested. It was necessary to dilute the serum, but more extended observations were required to fix the limit of dilution and the time-limit of observation by the re-action. Bacilli from old agar cultures were very rapidly agglomerated by typhoid serum and even more powerfully affected by normal blood than young growths twenty-four hours old. With very virulent cultures the re-action is delayed. Dr. Anderson had examined thirty-five cases; twenty-nine were clinically typhoid fever, and of these twenty-seven gave the re-action within half an hour, but in two the re-action was incomplete after twenty-four hours. Three cases of acute lobar pneumonia, one of pleurisy, and two of gastritis gave no re-action.—The PRESIDENT, Dr. HARGREAVES, Dr. RICHARDS, and Dr. BURGESS made remarks.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Cases.

A MEETING of this society was held on March 11th, the President, Mr. WILLIAMSON, being in the chair.

Dr. MCDONALD showed a man whose abdomen had been opened in Hamburg for an Abscess following Dysentery, but there seemed to be no positive evidence of its hepatic origin. He went home apparently recovered, but a month later was attacked with a violent pain in his right side, when he developed a swelling in the hepatic region and a typical pus temperature. The abscess was opened in December and characteristic chocolate-coloured pus escaped. The patient had recovered, but at the site of the first incision a hernia formed into which the stomach had prolapsed. Troublesome gastric symptoms now existed for which a third operation was required.

Dr. MCDONALD next showed three children operated upon for Tuberculous Peritonitis. The fluid had been washed out, adhesions broken down, and the wound sutured without drainage. All had made good recoveries.

Dr. MCDONALD also showed a woman whose Breast and Axillary Contents were Excised in January, 1895. She was operated upon for recurrence three times subsequently, and was free from any local growth. She presented the swelling over the sternum characteristic of bone-marrow infection and had pain in her lumbar spine.

Professor GEORGE MURRAY showed typical examples of Exophthalmic Goitre and of Spleno-medullary Leukæmia.

Mr. PAGE showed a girl twelve years of age who when ve years old had suffered from Tabes Mesenterica. She recovered, and, though not robust, had not been ill since. Nine days before admission into the infirmary she was suddenly seized with abdominal pain and developed peritonitis. She was admitted with a large pericæcal abscess, which was incised and drained. For two days she was much relieved and promised well, but on the fourth day her condition again became critical. She was in great pain; her abdomen was much distended, neither flatus nor fæces had passed for two days, and she frequently vomited fluid with a distinct fæcal odour. A small opening was made in the middle line below the umbilicus; the first distended coil was drawn out and a Paul's tube was secured in it. The vomiting ceased at once, and for more than a month the evacuations all escaped by the fæcal fistula. This had closed up spontaneously. The bowels were now acting regularly by the natural channel and the patient was well.

Dr LIMONT showed several patients with skin disease, including cases of Rodent Ulcer, a case of the Band Form of Morphœa in a child causing great deformity and incapacity, and a case of Universal Seborrhœic Dermatitis of fourteen years' duration nearly well after a month of treatment.

Mr. RUTHERFORD MORISON showed a patient, together with a Skiagram of his Forearm, which had been recently Fractured between the Pronator and Supinator Muscles. The arm was much disabled, as the power of supination was markedly diminished. He also showed a dissected specimen of a similar fracture which illustrated the Pronation of the Lower Fragment of the Radius and the Supination of the Upper.

Dr. DRUMMOND showed a woman, fifty-four years of age, with Dulness and Pulsation under her Manubrium Sterni and a Pulsating Swelling extending into the Neck. The patient had no dyspnœa such as could scarcely fail to be produced by direct pressure on the trachea if a large aneurysm existed in this situation. The diagnosis was fusiform dilatation of the aortic arch and high origin of the innominate.

Dr. DRUMMOND also showed a man who had partaken freely of all kinds of liquor, and was admitted into the infirmary a month ago with Advanced Œdema affecting his whole body surface (alcoholic œdema). Everywhere his skin pitted deeply on pressure, and in addition he was in a dazed mental condition. There was no albumin in his urine, and beyond the cardiac feebleness and dilatation due to alcohol he had no heart affection. With rest, nourishment, and abstinence from alcohol he was now almost well mentally and bodily.

Mr. OUSTON showed a series of cases illustrating varieties of inflammatory diseases of the Maxillary Antrum. He advocated an opening above and behind the apex of the socket of the right canine tooth, the patency of which was to be maintained by a lead style worn as long as necessary.

Mr. OUSTON also showed a young woman whose symptoms had commenced after a serious illness, probably Typhoid Fever. Fourteen years before she had complained of gradually increasing dyspnœa and had paroxysms threatening life. Laryngeal examination showed complete abductor paralysis; tracheotomy had been performed, and she was now entirely relieved, but it seemed probable that she would be permanently dependent on the tube. No cause could be found or explanation given for her condition.

EDINBURGH OBSTETRICAL SOCIETY.

Extra-uterine Gestation.—Substitute for Forceps.—Electro-negative Puncture in the Treatment of Fibroids.—Fœtal Malformations.

A MEETING of this society was held on March 10th, Dr. ALEXANDER BALLANTYNE, President, being in the chair.

Dr. BERRY HART read a paper on the Extra-peritoneal Incision in Extra-uterine Gestation Intact and at Mid-term. While the conditions of an extra-uterine gestation may be very varied, there are practically three possibilities in intact forms. In the first two months the gestation is in the Fallopian tube, and intact or ruptured. At the third month it begins to develop between the layers of the broad ligament and lose its pediculated characteristic. At the fourth and fifth months it is usually embedded in the pelvic connective tissue and broad ligament, and may go on developing extra-peritoneally, but as a rule the fœtus escapes into the peritoneal cavity and the placenta remains extra-peritoneal or tubal. He specially referred to the second variety, having operated on five such cases. The first case had ruptured before operation and the patient died subsequently; the others recovered. The treatment should be wholly operative. In this class of case—mid-term and intact—the gestation is extra-peritoneal; the possibility of its being an ovarian pregnancy is most remote, and primary intra-peritoneal gestation is a myth. Dr. Hart advocates extra-peritoneal incision where possible, immediate removal of the fœtus, and, to avoid bleeding, the tamponade of the sac till the placenta is thrombosed if it cannot be easily separated. He thinks it better to open the abdomen in the middle line first, and thus to find the relations of the gestation and the reflection of the peritoneum. The vaginal route for operation is more difficult if the fœtus and placenta are present, and control of hæmorrhage is very difficult, as the tampon cannot be so effectively applied.

Dr. J. W. BALLANTYNE communicated a paper by Dr. C. F. Ponder (Kalimpong) on the Action of Midwifery Forceps. He believed that, apart from pelvic deformity,

fœtal hydrocephalus, or similar conditions, the main cause of difficulty in labour was in the non-dilatability of the soft structures of the pelvis, and he advocated the use of an instrument which would dilate the soft parts and make way for the head; he would give it the name of "dilating sector."

Dr. F. W. N. HAULTAIN read a paper on Electro-negative Puncture in the Treatment of Fibroids, a record of three cases. The first patient was thirty-six years of age and had suffered for many years from a large uterine fibroid. The hæmorrhage had so reduced her that her appendages were removed. The operation did not arrest the hæmorrhage, the tumour continued to increase, and her condition went from bad to worse. Pressure symptoms were developed, with retention of urine and albuminuria, and pains in the back and cramp in the legs. She was not free from pain except under morphia; ergotin and other medicinal treatment were used. Hysterectomy had been recommended, but before this was resorted to it was determined to give a trial to electric treatment. Dr. Haultain adopted negative electro-puncture through the posterior vaginal wall, the tumour filling the true pelvis. A current of 150 milliampères was passed without great discomfort. In a week a second application was made, and two days afterwards she was entirely free from pain. Applications were made at first at weekly intervals, and afterwards twice a week. In all twenty applications were made. There was some relapse from fatigue, but another course of treatment was given, when the tumour was found to have passed into the abdominal cavity, and the cervix could be reached with ease. Intra-uterine positive electricity was then commenced. For many months she has been in good health, menstruating regularly, and the tumour was diminished and moveable. The second patient was unmarried, was thirty-eight years of age, and also suffered from retention of urine. A large solid mass was found in the pelvis and reached above the umbilicus. It could not be pushed above the brim, even with the patient anæsthetised. Electro-negative puncture was made and a current of 180 milliampères passed. Micturition was spontaneously accomplished the same day. Fifteen other applications were made, and the tumour had then so diminished in size that an intra-uterine treatment could be carried out; fifteen applications of the negative pole in this position were made. The patient was seen recently, after an interval of over three years, and was in perfect health, with the tumour of the size of a small cocoanut and freely moveable with the uterus. The third patient was forty-six years of age, and suffered from complete urinary retention. A large tumour was found impacted in the pelvic brim. After three electro-negative punctures the retention was cured. In carrying out this treatment the vagina is thoroughly disinfected and cocaine is applied to the seat of puncture. The puncture is made by means of a thin steel electrode, insulated to within three-eighths of an inch of its point. This is inserted by a rotatory movement through the vaginal wall for at least one and a half inches into the tumour. The current is completed by the usual abdominal pad, and a continuous current of from 120 to 200 milliampères passed for from five to ten minutes. After withdrawal the vagina is again syringed and a pledget of iodoform gauze applied for forty-eight hours. This form of needle and the antisepsis prevent the putrid sloughing of the tumour previously met with in this method of treatment. Electricity is a conservative measure, and with the means detailed in this paper has no mortality. It has a decided curative action in some cases. It in no way increases the danger of subsequent operation, and in the large proportion of cases it should be employed before resorting to serious surgical interference.

Dr. J. W. BALLANTYNE showed photographs sent by Dr. Michin of Charkow, Russia, illustrating two cases of Thoracopagous Double Monsters, one of a Fœtus Dicephalus Tribrachius Tripus, one of Pelvis Fissa and Ectopia Vesicæ, three of Hemicephalus, and one of Mikromelus. All these cases were from the Charkow clinic.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Nephro-lithotomy and Nephrectomy.

A MEETING of this section was held on March 5th, Mr. WILLIAM THOMSON, President, being in the chair.

Mr. MYLES read a paper on Nephro-lithotomy and Nephrectomy. Having given details of several cases of successful operations for removal of renal calculi, he drew attention to one case in which nephrectomy for renal abscess had been performed and the kidney explored with the finger, but no stone detected. Subsequently the kidney was removed and was found to contain a calculus about the size of a hazel-nut and to consist of a series of abscess cavities. One case mentioned was operated on from the loin for the purpose of fixing a floating kidney, but on exposure the kidney was found to be cystic and it was accordingly removed. The mobility probably caused the cysts by intermittent blocking of the channel through kinking of the ureter. Mr. Myles then discussed the advisability of needling the kidney for exploratory purposes from the loin, as a substitute for lumbar or abdominal exploration, and pointed out the difficulties and dangers of the operation. He next detailed his attempts to obtain Roentgen photographs of stone in the kidney, and showed the practicability of the idea by exhibiting a photograph of a cadaver in the kidney of which he had placed a large renal calculus.

The PRESIDENT said that with regard to the question of needling as an aid to diagnosis he did not believe in sticking a needle into the loin in the hope of finding the kidney or of hitting a stone.

Mr. BALL said that in experimenting with the x rays one ought to be cautious in drawing conclusions as to the presence of a stone. From the photographs which Mr. Myles exhibited it could be seen that some calculi gave photographs like those given by gall-stones, which are very transparent. The skiagraph was of no use, he said, in cases of cholesterine calculi. Calculi containing a large quantity of lime or phosphate gave a good skiagraph; but lithic acid was almost as transparent as cholesterine.

Mr. M'ARDLE thought the x rays of great value in the diagnosis of calculi. He had experimented with tubes somewhat different from the usual kind, and had found that cholesterine crystals were shown very clearly, so that the question of translucency was of no weight at all. With regard to needling, he had himself practised it as well as passing sutures through the kidney in his first operations on floating kidney, but he had now abandoned the practice as the results had been unfavourable.

Mr. R. LANE JOYNT said that from skiagraphy negative results were sometimes obtained. With reference to the case at present in hospital to which Mr. Myles had referred, the shadows on the first plate, though definite, could not be recognised as any known objects. A second photograph showed the ilium, but not the spine, and was therefore rejected. A third photograph revealed the spinal column distinctly, but no calculus was evident. He therefore concluded that, at all events, an opaque calculus was not present, but that a translucent calculus might be present.

SECTION OF OBSTETRICS.

The Anticipation of Post-partum Hæmorrhage.

A meeting of this section was held on Feb. 12th, Mr. HORNE being in the chair.

Dr. LOMBE ATTHILL read a paper on the Anticipation of Post-partum Hæmorrhage. He advocated the exhibition of ergot in combination with doses of from five to ten drops of liquor strychniæ for two or three weeks prior to the date at which labour was calculated to set in in the case of patients in whom a tendency to post-partum hæmorrhage was known to exist, and he gave the details of cases in which this treatment was followed by the most satisfactory results. He stated that the exhibition of ergot when hæmorrhage had set in was seldom of use, because ergot to produce any permanent effect on the uterus requires to be administered at least some hours previously and the dose must be repeated at intervals of about two hours. He had for many years carried out this treatment in all suitable cases; it had never failed to produce good results, and had never caused unpleasant symptoms or injured either mother or child. So far from inducing labour to set in prematurely, the exhibition of ergot and strychnine tended to retard its onset. Thus, in the case of one patient who on several occasions had nearly lost her life from post-partum hæmorrhage, not only was hæmorrhage averted, but the term of utero-gestation was prolonged to the 293rd day, calculated from the end of the last menstrual period; while on the three previous occasions labour with her had set in on about the 270th day; and in another case, while hæmorrhage was in like manner averted, labour did not set

in till the 288th day—this patient's previous pregnancies having always terminated prematurely. Dr. Atthill also advocated the exhibition of ergot in cases of threatened abortion as being, coupled with absolute rest, the best method of preventing its occurrence.

Mr. HORNE said that he had had opportunities of seeing one of the patients to whom Dr. Atthill administered ergot for some weeks before her confinement, and he could bear out his statement that very little blood was lost. He thought that the administration of ergot before uterine action set in had very little effect. The great danger in using it was when the membranes had ruptured and the waters escaped. The tonic effect of the ergot was then likely to stop the circulation of the fœtus and cause its death.

Dr. ALFRED SMITH said that on the proper management of the third stage of labour depended the chief security against post-partum hæmorrhage. He had never had in private practice a case of post-partum hæmorrhage where the labour was otherwise normal. He had seen severe cases of it in the Rotunda Hospital when he was a student, but rarely where there was proper attendance in the third stage of labour. He frequently used Dr. Atthill's mixture of ergot and strychnine in cases of threatened abortion or miscarriage.

Dr. F. W. KIDD believed that some students acquired the habit of resorting too soon in the third stage of labour to Credé's method of expelling the placenta, and that that practice was a very prevalent cause of post-partum hæmorrhage.

Reviews and Notices of Books.

The Cell in Development and Inheritance. By EDMUND B. WILSON, Ph.D., Professor of Invertebrate Zoology, Columbia University. New York and London: Macmillan and Co. 1896. Pp. 371. Price 14*s*.

WE heartily recommend this book. There are many practitioners who have neither time nor disposition to read the larger treatises on botany or histology in which the modern views on the structure and functions of the cell are to be found in some detail, yet are desirous of following the progress of science so far as to be able to comprehend the new terms that are gradually making their way into common use in scientific treatises. In the present volume they will find an admirable exposition of the knowledge that has been acquired by the labours of a succession of keen observers during the last twenty years. In that space of time an immense mass of material has accumulated, needing much discriminative power and acumen to sift, compare, and appreciate, all which Dr. Wilson has accomplished in a very satisfactory manner. The improvement in the power of the microscope and the remarkable advances that have been made in staining the several tissues and even the several parts of a cell have led to the recognition of structure where but a few years ago none was supposed to exist. It is, indeed, highly interesting and instructive to contrast the account of the structure of a cell as given by Schleiden in 1849 with that which is taught by the modern histologist. For Schleiden the cell originated in a nucleus or cytoblast formed by the approximation of particles of mucus or cytoplasm, around which a gelatinous mass developed, the whole being enclosed in a cell wall. The only named parts were the nucleolus, nucleus, and nuclear membrane, protoplasm and cell contents such as chlorophyll, starch, oil, and crystals formed from protoplasm, and the cell membrane lined by a special layer of protoplasm named Mohl's primordial utricle. No structural features were observed by him in the nucleus. The only staining agents at his command were iodine and nitric and sulphuric acids. The structure of a cell as now given is a very different affair. The cell wall, though generally present in the cells of plants, is no longer regarded as an essential constituent, and when existent is usually almost inactive and lifeless. In many cases pores have been discovered through which bridges of protoplasm pass effecting a connexion between adjoining cells. The cell contents present a delicate reticulum or mitome composed of microsomes or granules, containing in their interspaces cytoplasm and in addition various lifeless bodies such as food granules, pigment bodies, drops of oil or water, excretory matters, and other particles, known as plastids or protoplasts, capable of growth and division. Finally, there are the curious bodies known as centrosomes, with their attraction spheres, the importance of which in the multiplication of the cell has only lately been recognised and which is still the subject of inquiry. Then in regard to the nucleus we have the plasmosome or nucleolus, the chromatin and linin network, with their karyosomes or net-knots. The reader will find a chapter devoted to the process of cell division, in which are brought together the results of all the recent researches of Reinke, Hortwig, Boveri, Erlanger, and Flemming, with a full account of the process of mitosis or indirect division, with its prophases, metaphases, anaphases, and telophases—information not hitherto readily accessible. The chemical composition of the nucleus seems to be almost as complex as its histological structure, for no less than five substances have been differentiated—viz., chromatin, composing the reticulum and net-knots; linin, including the achromatic network and the spindle fibres arising from it; paralinin, the ground substance; pyrenin or parachromatin, forming the inner mass of true nucleoli; and amphipyrenin, which is the substance of the nuclear membrane. Dr. Wilson gives a full account of the processes that have been observed in the fertilisation of the ovum, with those of oogenesis and spermatogenesis. A very interesting chapter is devoted to some problems of cell organisation in which the origin of the microsomes, the connexion between the nuclear and cytoplasmic fibres, and the nature of the chromosomes, centrosomes, and attraction spheres are discussed. He quotes and apparently coincides with Rabl in thinking that the chromosomes do not lose their individuality at the close of division, but persist in the chromatic reticulum of the resting nucleus, and that whatever be the number of chromosomes entering into the formation of a reticular nucleus the same number afterwards issue from it; whilst Boveri is of opinion that we may identify every chromatic element arising from a resting nucleus with a definite element that entered into the formation of that nucleus, from which the remarkable conclusion follows that in all cells derived in the regular course of division from the fertilised egg one half of the chromosomes are of strictly paternal origin, the other half of maternal, a view that has been supported recently by the observations of Rückert, Häcker, Herla, and Zoja. One of the chapters which will be read with much interest is that which deals with the theories of inheritance and development, and especially with those of Roux and Weismann and of Hortwig and de Vries, at the close of which the writer frankly admits that an explanation of development is at present beyond our reach when he observes: "After removing the lens of the eye in the larval salamander we see it restored in perfect and typical form by regeneration from the posterior layer of the iris, we behold an adaptive response to changed conditions of which the organism can have had no antecedent experience either ontogenetic or phylogenetic, and one of so marvellous a character that we are made to realise, as by a flash of light, how far we still are from a solution of this problem." The text is prodigally illustrated by well-executed woodcuts, which in themselves are sufficient evidence of the variety and interest of the phenomena exhibited by the cell, and only lead to the fear that in the next generation there will be a special department of cytology with its own methods of research and its own language, as it has rapidly developed its own history and bibliography, which, it may be added, the student will here find well worked up to date.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XVI. Session 1895-96. London: J. & A. Churchill. 1896. Price 12*s.* 6*d.*

THE present volume of the Transactions of this active and vigorous society, edited by its able secretaries, Dr. Habershon and Mr. Lawford, is quite equal in the value of its contents to any of its predecessors. The introductory address was delivered by Mr. Nettleship, who dwelt on the many points that still require elucidation in ophthalmological work. The Bowman Lecture was given by Dr. H. Snellen, who gave as the modest title to his interesting paper "Notes on Vision and Retinal Perception," and dealt with the question of the accuracy of the ordinary methods of testing the acuteness of vision, both in regard to the form of the object employed as a test and the degree of illumination under which it is examined. The articles contained in the volume are arranged in topographical order and, commencing with the eyelids, successively give the diseases of the conjunctiva, cornea, iris, lens, choroid, retina, and optic nerve, and intra-ocular tumours, diseases of the orbit and congenital abnormalities, whilst a considerable section is devoted to miscellaneous contributions. Amongst the more important and interesting specimens and cases brought before the society may be mentioned an example of Alveolar Cancer of the Eyelid, by Mr. Simeon Snell, which is illustrated in a plate and appears to have originated in the acini of the Meibomian glands; several cases of Films of the Cornea, illustrated in a chromo-lithographic plate, by Mr. Frost and Mr. Poulett Wells; a Uveal Cyst of the Iris, by Mr. H. Eales and Mr. W. Sinclair; an article on the Treatment of Detached Retina, by Mr. Charles Wray, which led to a record of the experience of the President, of Mr. Tweedy, Mr. Snell, Mr. Eve, and others, none showing very favourable results; Mr. Lawford, Mr. W. G. Laws, and Mr. Hartridge give accounts and coloured illustrations of Retinitis Circinata; Dr. F. M. Ogilvie describes cases of Optic Atrophy in Three Brothers; and another case of Hereditary Optic Atrophy is brought forward by Dr. R. D. Batten; Mr. Spicer records a case of Chronic Retro-bulbar Optic Neuritis, with Permanent Change in the Nerve, set up by the use of Tobacco. Mr. Treacher Collins contributes an interesting paper on Intra-ocular Tumours, which he is well qualified to discuss. Mr. Jessop has collected many cases of Exophthalmic Goitre, showing the results in regard to vision that occur when the protrusion is considerable. Perhaps the best article in the volume is one by Dr. George Bull of Paris on the Visual Effects of Refractive Error, containing numerous illustrations of the appearances seen by astigmatic patients. Dr. George Dean and Mr. C. H. Usher of Aberdeen also contribute a valuable paper on the Course of the Fibres of the Optic Nerve, chiefly drawn from observations made on the rabbit. Mr. Simeon Snell gives the result of further inquiries he has made on Nystagmus, which he shows may be acquired in other occupations than coal mining.

A Manual of Obstetrics. By W. A. NEWMAN DORLAND, A.M., M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania, &c. With 163 Illustrations in the Text and six full-page Plates. London: Henry Kimpton. 1896. Price 12*s.*

THE author's chief object in preparing this manual has been to produce "a systematic and rational presentation of the subject of obstetrics as recognised by the leading teachers of the day." He divides his work into two parts, the first dealing with what he calls physiologic obstetrics, in which the course of events is followed in a natural sequence, starting from conception and ending with the time when the child is weaned. In the second part of the work the pathological deviations from the normal type are dealt with. We observe that the measurements in the text are given on the metric system and the equivalent measurements in inches are given in brackets afterwards. Thus, the external conjugate or diameter of Baudelocque is given as being normally 20½ cm. (7·9724 in.), and we are told that this is 9½ cm. (3·6417 in.) more than the true conjugate. We should be inclined to think this method is not likely to make it easy for the student to remember the approximate measurement. An English teacher would say the external conjugate measures about 7¾ in., and is therefore about 3½ in. greater than the conjugate of the pelvic brim. The same kind of criticism applies to the measurements given of the fœtal skull. We observe it stated among the symptoms given as indicating hydatidiform mole that there is "a discharge of a sero-sanguineous fluid containing the peculiar vesicular growths," whereas we believe it to be extremely unusual for these cysts to be found in the discharge, except, of course, when the mole is in process of being spontaneously expelled. There are several terms and expressions that would probably excite consternation if they appeared in the examination papers at the Hall on the Embankment. We can imagine the feelings of the average candidate if asked "What is the difference, if any, between the 'alligator boy' and the 'collodion fœtus'? State what you know of 'Ectromelus,' and describe Cooke's method of treating asphyxia neonatorum." This we find to be the rapid introduction of the lubricated finger into the rectum. It is only fair to add that the danger of causing permanent rectal incontinence is pointed out.

The book is of a convenient size, the illustrations are good, and the information given is generally reliable.

LIBRARY TABLE.

Dental Surgery for Medical Practitioners and Students of Medicine. By A. W. BARRETT. Third Edition with Illustrations. London: H. K. Lewis. 1897. Price 3*s.* 6*d.*—That this small volume should have reached a third edition is sufficient proof that it has been of some value to the medical student. A perusal of its pages shows that the information given is reliable, but we cannot help feeling that much more that is useful might be added, while perhaps the portions dealing with irregularities and caries of the teeth might be curtailed. It is, of course, necessary that the medical man should be able to recognise both irregularities and caries of the teeth, but the section dealing with the treatment of these hardly perhaps falls within the scope of this class of book. In future editions we would suggest that such subjects as "lancing the gum" should be more fully dealt with, as well as the reflex disturbance which can at times be traced to dentition. Some hints and directions, too, might with advantage be added for the treatment of cases where dentures have been swallowed, and the subject of Pyorrhœa Alveolaris might certainly be more fully dealt with, as well as many other subjects on the borderland between general and dental practice.

The Spas and Mineral Waters of Europe. By HERMANN WEBER, M.D. Bonn, F.R.C.P. Lond., and F. PARKES WEBER, M.D. Cantab., M.R.C.P. Lond. London: Smith, Elder, and Co. 1896.—Physicians will be grateful to the authors of this compendious manual for having afforded them the means of estimating the comparative value of British and Continental health resorts in respect to the character of the mineral spas and baths to be found therein. The details referring to each place are brief but sufficient, affording just that amount of information that is essential whilst more competent guides could not be found. The various "waters" are grouped into the following series, to each of which a separate chapter is devoted: (1) simple or indifferent thermal; (2) common salt or muriated; (3) simple alkaline; (4) muriated alkaline; (5) sulphated alkaline; (6) sulphated and muriated alkaline; (7) iron or

chalybeate; (8) arsenical; (9) sulphur; and (10) earthy or calcareous. These descriptions are preceded by chapters in which the question of balneo-therapy is discussed from the general standpoint and the mode of life at a Continental spa is sketched. At the close of the volume, after sections dealing with table waters and marine spas, there comes a most valuable chapter in which the reader has the advantage of learning on the best authority the therapeutical indications for the prescription of a sojourn in these resorts. Needless to say that the advice is thoroughly sensible and practical. A copious bibliography is appended to the volume.

Septic Conditions of the Infantile Alimentary Canal and their Treatment. By F. W. FORBES ROSS, M.D. Edin. London: The Rebman Publishing Company. 1897. Price 7*s.* 6*d.*—The subject of this monograph is one of great interest and importance, thoroughly deserving of scientific investigation and elucidation. Yet we are constrained to admit that the author has not done justice to his theme or to himself in the manner in which he has dealt with it. His style is lacking in simplicity and it is often difficult to seize upon the precise meaning he attaches to phrases and terms, whilst the plan of the book strikes us as wanting in directness and system. Nevertheless, his aim is a commendable one, for if we understand it aright it is to impress on the profession the importance of regarding infantile intestinal derangements not so much from the anatomical side as from the etiological, and thus to emphasise the fact that most of these disorders are referable to changes of a fermentative (or, as the author prefers to term it, "septic") nature. The book, in spite of its blemishes, which may be largely rectified by careful revision in another edition, contains much that is of practical value, as, for instance, the directions for securing a pure milk-supply, the mode of feeding, and the treatment of infantile constipation and diarrhœa. Amongst intestinal antiseptics the author speaks most highly of salicylate of bismuth. The good effects of irrigation with solution of boracic acid in the treatment of ulcerative colitis are emphasised, and full directions are given for this rational plan of treatment.

Sell's Directory of Telegraphic Addresses has now become a bulky volume, and a very handy one to those who have need of the especial information which it conveys. The recent addition of the telephone numbers to the addresses still further enhances the value of the work. It is published by Mr. Sell at his offices in Fleet-street, at 18*s.* for subscribers, and 21*s.* for non-subscribers, including three additional quarterly supplements.

Australian Medical Directory and Handbook. By L. BRUCK. Sydney: L. Bruck, Castlereagh-street. London: Baillière, Tindall, and Cox. 1896. Pp. 196. Price 8*s.*—This work of reference, which made its first appearance in 1883, is indispensable for those in quest of information relative to the medical profession in our extensive Australasian possessions. It commences with an abstract of the Medical Acts in force in the five Australian colonies, Tasmania, and New Zealand, after which comes a list of public medical appointments, chiefly under the various Governments, together with the names of the holders. Next there is a series of notices of the medical and allied scientific societies and a scale of fees for medical attendance. The greater part of the book consists of the list of qualified practitioners in Australia, Tasmania, New Zealand, Fiji, Samoa, Tonga, New Hebrides, and New Guinea; it contains about 2613 names, and of these about twenty are names of ladies. The first edition of the Directory was published in 1883, the second in 1886, the third in 1892, and the present one, which is the fourth, is corrected up to September, 1896. Some reference to the colonial universities was made in the second edition, but has unfortunately been omitted in the later ones on account of the tendency of the volume to increase in bulk.

Kelly's London Medical Directory for 1897 (Kelly and Co., High Holborn) embraces the districts extending from Hounslow (west) to Barking (east), and from Croydon (south) to Barnet (north). The fulness of the entries will be appreciated by many. To those to whom a medical directory of London and the suburbs is a necessity this work will be serviceable.

The Charities Register and Digest for 1897 is to hand, and the publishers (Messrs. Longmans, Green, and Co.) announce that it will henceforward be issued annually, at the reduced price of 4*s.*, instead of at 10*s.* 6*d.* This well-known and handy volume will doubtless gain many additional friends under the new *régime*.

Herbert Fry's Royal Guide to the London Charities (33rd annual edition; Chatto and Windus) is also before us, and, being arranged on the alphabetical principle in concise form, is especially convenient for easy reference.

The Local Government Directory for 1897 is a useful storehouse of information upon many matters connected with its especial department, and in these days, when increased interest is taken in the question of local government, it may well find a place on the shelves of those who would be *au fait* with what is being done. Messrs. Knight and Co., of Fleet-street, are the publishers.

Whitaker's Directory of Titled Persons for 1897 is designed as a companion to the well-known "Whitaker's Almanack," with which it is uniform in size. The work embraces the usual contents of a peerage, baronetage, and knightage, including dowager ladies and titled issue, and is presented under a single alphabet, making it very handy for reference. An alphabetical list of country seats is also given and an extended list of the Royal Family. Published at the popular price of half-a-crown, it will undoubtedly attain a large measure of success.

JOURNALS, REVIEWS, &c.

Birmingham Medical Review.—In a paper on Some Clinical Aspects of Acute and Chronic Alcoholism Dr. T. Sydney Short gives several useful hints on such important practical subjects as the distinction between alcoholic coma and apoplexy, and the diagnosis of mental disorder brought on by over-indulgence in intoxicants; the descriptions of delirium tremens, acute traumatic delirium, and mania a potû are very graphic. Mr. J. Pietersen, medical superintendent of Ashwood House Asylum, writes on Auditory Hallucinations.

Scottish Medical and Surgical Journal.—In the opening article Dr. John Duncan (Edinburgh) describes a case in which a calculus weighing 2¾ ounces was removed from the kidney. The operation was performed on Dec. 2nd last, and the wound was quite healed on Feb. 15th. Dr. Joseph Bell (Edinburgh) writes on the relation of the trained nurse to the profession and the public. Dr. W. F. Somerville (Glasgow) discusses medical gymnastics in the treatment of disease.

Edinburgh Medical Journal.—Dr. W. Allan Jamieson contributes an article on Syphilis considered dermatologically. Several valuable papers are continued from preceding numbers of the journal, such as those by Mr. G. A. Berry on Strabismus, by Dr. R. A. Fleming on the Effect of Ascending Degeneration on the Nerve Cells of the Ganglia on the Posterior Nerve Roots, and the extracts from clinical lectures by Mr. Hutchinson. The illustrations include three full-page plates and a number of figures in the text.

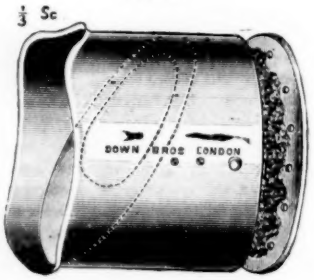
Dublin Journal of Medical Science.—Dr. F. W. Kidd describes three cases of Ectopic Gestation which were under his care in 1895 and 1896; the first of the patients died on the second day after operation, but the other two recovered. Mr. Langford Symes writes on Splenic Anæmia in Children.

New Inventions.

A METAL HOSPITAL INHALER.

IN connexion with the discussion which has recently taken place in the columns of THE LANCET on the occurrence of pneumonia after operations, and the possibility of infection from the inhalers used in the administration of anæsthetics, I send particulars of the metal inhalers to which I referred in my article of March 20th. If a little care is taken in using them, and if the ordinary instincts of cleanliness are followed, I have had nothing to complain of in respect to

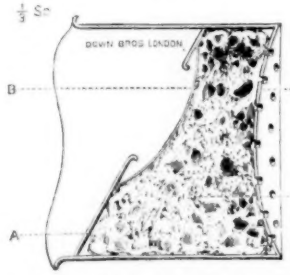
FIG. 1.



General view of inhaler.

the celluloid inhalers which I introduced some years ago; but when subjected to the rough usage of busy hospital work they are apt to get out of shape. It was chiefly to overcome this latter difficulty that these metal inhalers were designed, though it will also be found that they are more easily sterilised in accordance with the advanced theories of aseptic surgery. In general shape (Fig. 1) they resemble the Rendle's Mask, but the dome-shaped, perforated top of the latter is inverted so as to form a cup (Fig. 2, D) through which, if necessary, the sponge (Fig. 2, C) can be fed without

FIG. 2.



Sectional view. A. Drip-catcher or diaphragm. B. Wire sponge guard. C. Sponge. D. Perforated, concave, hinged lid.

removing the apparatus from the face. This cup is hinged to admit of the introduction of the sponge in the first instance. Another distinctive feature is the metal diaphragm (Fig. 2, A), set at an angle, and designed to prevent the superfluous liquid from running on to the face, a radical defect of many inhalers unless in skilled and careful hands. To further ensure that the sponge shall not slip on to the face a wire guard (Fig. 2, B) is fixed across the opening in the diaphragm. No flannel bag or rubber face-pad is necessary, or, in my opinion, desirable. Of course, pure chloroform ought not to be given in such an apparatus as this. It is intended, primarily, for the A.C.E. mixture, or it may be used to maintain the anæsthesia with ether. The method of using it is sufficiently obvious. I may, perhaps, add that I have had these masks in use for two or three years in hospital work, and believe that they fulfil the objects which I had in view when designing them. I am greatly indebted to Messrs. Down Bros. for their patience and skill in carrying out my wishes in the matter.

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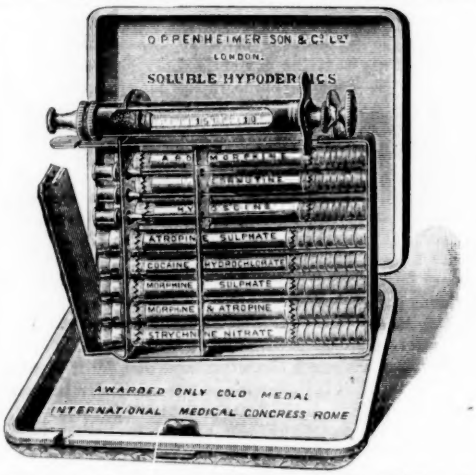
Devonshire-street, Portland-place, W.

AN IMPROVED HYPODERMIC CASE.

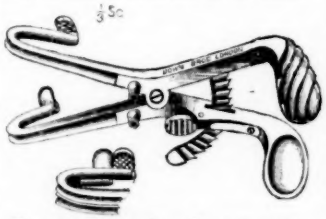
MESSRS OPPENHEIMER AND SON, 14, Worship-street, E.C., have recently brought out a new pattern of hypodermic case which presents some useful characteristics. It is made of aluminium, is shaped like a cigarette case, and contains a moveable frame which securely holds a hypodermic syringe, two ordinary hypodermic needles, one exploring needle, and



twelve assorted tubes of soluble hypodermic tablets. In designing the case special care was taken to prevent its contents shaking about when it is carried in the pocket. The tube of any drug which happens to be required can be found at a glance. The shape and materials of the case allow of its being thoroughly cleansed and rendered aseptic whenever required by washing with any of the ordinary solutions used for the purpose.

IMPROVED MOUTH-OPENER AND GAG.

I HAVE recently designed a form of mouth-opener and gag, which, proving satisfactory in practice, I venture to recommend to the consideration of the medical profession. By the illustration it will be seen that it has a rack catch action, which fixes automatically when opening the gag, while upon touching the trigger the stop rack action is thrown out of gear and the gag closed with the greatest facility, irrespective of the amount of pressure which is being exercised upon the tooth plates. In lieu of the metal vapour tubes, as suggested by Dr. F. Hewitt, I have had a gutter cut in each of the arms of the gag, over which pieces of rubber drainage-tube may be slipped to convert them into tubes; the advantages of this are that the vapour ways do not increase the bulk and are readily cleaned or cleared, and further, being made of solid steel, they are not liable to be damaged from an accidental fall, a somewhat frequent occurrence with the metal tubes originally designed for the purpose. I have also adopted in a modified form the suggestion of Mr. W. R. Ackland—namely, that of setting the tooth plates one behind the other to act as a wedge if required. The gag can be made with broad tooth plates for edentulous jaws, or those in whom the teeth or gums are tender, thus doing away with bruising and at the same time giving a wide basis of support. The instrument being entirely of metal is easily sterilised. I have to thank Messrs. Down Bros., of 21, St. Thomas's-street, London, S.E., the makers, for much time, trouble, and careful carrying out of my ideas.



The upper figure shows the gags open. The lower shows the blades closed and the position of the tooth plates one behind the other.

F. WILLIAM COCK, M.D. Durh.
Porchester Houses W.

THE LANCET.

LONDON: SATURDAY, MARCH 27, 1897.

WE have now before us the report of the Earl of ONSLOW'S Departmental Committee and the Memorandum of the Army Sanitary Commission on the health of the Army in India. These documents deal with an unsavoury subject for public discussion, and the public press would, no doubt, have been glad on this account to have adopted a policy of silence in regard to it, but the appalling significance of the facts was too glaring and patent to be passed over. These have now been thoroughly sifted by impartial and independent inquirers and established upon unimpeachable authority, and it is certainly time that the public should be made acquainted with them. Recognising the extreme gravity of the situation that has been brought to light, the press of this country—for the alleged condition of things in this respect has long been a source of wonder and amazement to people abroad—at once realised their sense of responsibility in the matter, and with a courage and unanimity which does them great credit have deemed it an imperative duty that the facts should not be hidden.

The Departmental Committee's very able and exhaustive report deals with the nature, extent, and the present and prospective effects of the evil. It is no wonder that the term "appalling" has been so generally applied to the facts now authoritatively set forth in regard to the free and unrestricted trade in sexual vice followed in India at the present time. What are those facts?

"The present situation," says the report, "may be summed up as follows. In 1895 venereal disease attacked the British troops in India to an unprecedented extent. The amount of syphilis was disproportionately great, and it was of an increasingly virulent type. Of the enormous total of 522 venereal cases per 1000 troops, syphilis contributed very nearly one-half—i.e., 259 cases per 1000, a figure many times greater than the highest of which we can find any record in the statistics of Continental armies for recent years, either at home or abroad. Venereal disease directly caused more than one-third of the total amount of sickness; fifteen deaths in India; 348 invalidings, resulting in 130 cases in final discharge from the service; the constant and total disablement of 3200 men out of a force of 71,000 men; and a vast amount of partial disablement and unfitness for any but routine duties. Indirectly it increased the amount of sickness and invaliding under the head of many other complaints. The military efficiency of the Army was most seriously impaired, and the increasing prevalence and intensity of contagious and inheritable disease among a body of 71,000 men, of whom many thousands are annually coming home to mingle with the civil population, was a growing danger to the health of the community."

We can only repeat here what we have already said, and the report of the Departmental Committee in effect, but in other words, confirms the accuracy of the description. The main points lie in a nutshell. We have to deal with an army composed of young, inexperienced, and inflammable material, removed from home ties and restraints, living in a state of celibacy enforced on them for the good of the State. No efforts of a direct and really practical kind are made by the State, however, to protect them against the temptations to which they are exposed, with the result that the safety of the Empire is being threatened, the health of the young soldier is being cruelly sacrificed, and the well-being of the class of society from which he is drawn and to which he may be expected to return is gravely endangered. All attempts that are made to control this class of disease by physical methods have been characterised by theorists, faddists, and fanatics as the licensing of vice, regardless of the fact that the sexual appetite is an instinct implanted in a man from his birth, though latent for some years, and that it is, and has been in all past history, the strongest passion in human nature. To recognise this is to go to the root of the matter. That no moral means of dealing with it that can be suggested should be left untried everybody will admit, but these have been practically exhausted, so far as India is concerned, with the results which we have now seen. Matters cannot be allowed to remain as they are. The State owes it as a duty to the soldier to protect him against himself and against the conditions environing him. It is clear that we cannot by merely moral means—by advice, occupation, by reading-rooms, lectures, institutes, and by physical and mental amusements—fortify him against sexual temptations. Are we, then, simply to fold our hands and shrug our shoulders? To adopt this course would be a crime and a scandal. We must deal with syphilitic disease in India as we deal with other contagious diseases that are preventable, or, at any rate, capable of being limited, and adopt some practical form of disciplinary methods and hygienic regulations for limiting their spread and for protecting our young soldiers from the disastrous results of this terrible scourge. A woman in a diseased condition plying her calling in a cantonment is a terrible calamity. Nor must it be forgotten, although it commonly is, that restrictive measures for the protection of the soldier afford the most merciful course that can possibly be adopted for the unfortunate woman. How can she be cured or relieved without rest and medical treatment? The opponents of all restrictive measures have nothing to offer as a substitute. It is only necessary that statesmen with the courage of their opinions should get up in their places in Parliament and declare that the House of Commons' Resolution must, so far as India is concerned, be rescinded. The Army Sanitary Commission, while fully recognising, as everybody must, the appalling nature of the evil, has contended that the Lock Hospital system in India failed to accomplish anything like as much as was anticipated from it, but is compelled to admit that it nevertheless served to check the growth of the evil. Many people agree with the Commission that the system which was in force and as it was worked in India proved an unsatisfactory and inadequate one, but that is no reason why another and better system cannot be devised! The authorities in India should have a free hand in considering the restrictive measures they deem essential for dealing with the disease in question.

Various suggestions and recommendations have already been put forward, and some of them are of such an obvious and common-sense character as to commend themselves to most unbiased people of ordinary intelligence; but we hope soon to have an opportunity of dealing with this side of the question. We understand that a deputation from the Royal College of Physicians of London paid a visit to Netley Hospital on Saturday last to see for themselves the cases of syphilitic disease at present under treatment there, and the results of their inspection and report upon the subject will be awaited with great interest. Meanwhile there can no longer be any doubt that it is one calling for the gravest consideration of the Government of this country with a view to prompt action being taken. We are glad to notice, too, that there seems to be a growing conviction, even on the part of those who were opposed to legislative action, that something must be done to check the evil in question, and that a disposition exists on the part of all sensible people to adopt any reasonable measures that can be applied.

THE International Sanitary Conference of Venice, after sitting for five weeks, closed its proceedings on the 19th instant, and some sixteen of the Powers represented signed the Convention which had been drawn up. Together with the three preceding Conferences—namely, those of Venice (1892), Dresden (1893), and Paris (1894)—the four Conventions which have resulted may be regarded as forming an International Code for the prevention of the dissemination of cholera and plague, both in and out of Europe, by land and by sea, and in connexion with both ordinary traffic and the pilgrimage to Mecca. The actual Convention which has been signed is not yet available, but we are informed that it will be issued from Rome after a short interval. But enough is known of it to prove that the gathering from which it has resulted has, so far as Great Britain is concerned, been a very distinct success; and when we remember that the attitude of this country has for some fifty years been one of maintained opposition to quarantine, the fact of such success means a good deal.

When the Conference was first mooted there seemed some objection on the part of Great Britain to entertain it. Plague was in a British possession, and a number of Mediterranean Powers, including, unfortunately, our own Mediterranean colonies, had set in motion the most antiquated forms of quarantine detentions, and had even resorted to absolute repulsion of every ship, person, or thing that hailed from British India. The preparation of a code for the prevention of the spread of plague under such circumstances seemed to be beset with difficulties, and on many sides nothing but failure was anticipated. But a correspondent who has had opportunities of conversing with the delegates of different nationalities during and since the sittings of the Conference has arrived at the conviction that the very eccentricities of sanitary administration which in a moment of panic were resorted to have had the effect of causing a marked change of opinion amongst some of the leading authorities of Europe in favour of the methods which have so long been adopted in England; some of these authorities have not failed to contrast the perfect quietude with which this country recently met not only an importation of a few cases of plague, but almost simultaneously the arrival of a batch of cholera cases at one of our southern ports, with the panic which was manifested in the Mediterranean—not because disease had been imported, but merely because it was thought such a thing might occur.

It is, perhaps, due to this more than anything else that sound progress has been made in Venice, and as typical of this progress we may mention the fact that shipping from British India will no longer be detained at Suez merely on the chance that someone on board may sicken of plague, but will be at once allowed to pass the canal under the care of guards, provided there is no plague on board. This in itself is a gain of the first magnitude, for the detention of ships at Suez, merely because that place is, as it has been termed, the neck of the bottle by which disease can be prevented from passing from the East into Europe, is a hindrance to British commerce and navigation of a very serious character, and one which long years of experience have shown to be quite useless. India has been styled "the home of cholera"; plague has, alas, been epidemic in Bombay for several months. But during all these years and months British shipping which passes from India to our ports in one unceasing line has always failed to convey disease to our populations, and this experience is at last telling on other nations besides ourselves. The protests which have been made by the leading medical advisers of the French Government, for example, against the attitude of Marseilles have been proved to be right. Marseilles is the main sufferer, for the shipping and merchandise which would otherwise have gone to that por have gone elsewhere, and some of the inhabitants are now crying out for Government support of those who have deprived themselves and their unhappy families of their means of existence.

Another point of importance that has been gained at Venice relates to merchandise. No country is required to prohibit the importation of any article of merchandise, and yet the failure to impose such prohibition is in no way to bring about restrictions against any such country by reason of its free admission of merchandise. Before the Conference met we heard that nearly every conceivable article might convey the infection of plague and was therefore to be avoided. Thus corn, rice, cotton, skins, Eastern carpets, and numberless other things were looked upon with suspicion and even with fear; but the Conference has not supported this view, and the result is that, whilst freedom of action within certain limits is allowed to each of the contracting Governments, every one of the articles which had been regarded as dangerous may, under the Convention, be admitted into any country at the will of the country concerned. The Governments which prefer to subject certain articles to disinfection before receiving them are, of course, free to do so; but in former Conventions there has always been a list of merchandise, produce, &c., which was either altogether prohibited of which could only be admitted after disinfection.

In short, there has been manifested a very distinct and general advance in the direction of English views. These views are that the proper way to prevent the importation and spread of disease conveyed from abroad is not to impose restrictions on ships, passengers, and merchandise, but to

improve the sanitary conditions under which the people are living, and to maintain such a sanitary administration as shall prevent the spread of any such disease as may reach our ports or cities. But Great Britain can never make any boast as to her action in this direction so long as such places as Malta follow the traditions of past generations; and we have been informed that when the action of this colony was referred to in the Conference the English delegates, for the first time in its sittings, had practically to excuse themselves for advocating that which our own colonies not only fail to carry into effect, but discard with as much tenacity as the most backward of European and other nations. Dr. THORNE THORNE is said to have announced that he felt a sense of shame, after all that the Conference had done in advocating the supersession of quarantine, that he was absolutely without answer as to the reproaches against Maltese action. Surely in this matter some change of attitude ought to be brought about, so that England shall not constantly be subjected to the reproach of other nations.

THE Council of the Hospital Sunday Fund holds its annual collection in June, on a Sunday fixed chiefly by high clerical dignitaries and ministers, on whose eloquence and on the liberality of whose congregations the sum raised mainly depends. By a concurrence of days it so happens that the Sunday chosen this year for the hospital collection synchronises with the actual anniversary of HER MAJESTY'S accession to the throne. Whether this concurrence is altogether fortuitous we cannot quite say; but of one thing there is no doubt, that it is altogether happy and natural. An esteemed contemporary of great influence has suggested that the coincidence is not a happy one and that the arrangement should be abandoned. It is argued that the public prefers to take its emotions one by one, and that it will not be in a mood, after a sermon on the reign of VICTORIA, which fills all her subjects with gratitude, to subscribe liberally to the Hospital Sunday Fund. It is doubtless our fault, but we fail to follow this reasoning. Our contemporary does not suggest any other object or collection in the place of the Hospital Sunday Fund which would be more likely to meet the mood and sympathy of the religious bodies. The subject has been already under the consideration of the Council of the Hospital Sunday Fund, which almost unanimously came to the conclusion that the Council had no option but to proceed with a collection the taking of which once a year is the object of its existence, which is generally held in June, and the date of which on this occasion has been settled at a meeting of its own constituents so far back as December. Our contemporary will readily see that it is not easy to alter an arrangement so fixed. The dates of the principal collections are all arranged months before they take place, and any dislocation would disarrange the whole method of the year. The day could not be altered merely by a vote of the Council, although it would be right to call a meeting of the constituents who really supply the Fund, and who by the rules fix the day of collection at the annual meeting in December. It is true that this course could be taken, and there can be no doubt would be taken if any good reason existed or if it could be shown that there was any real incongruity between a collection for the most benevolent of all charitable objects and a day of religious recognition of the blessings of the sixty years of the Victorian reign. The duty of the Council of the Hospital Sunday Fund is the more clear as the PRINCE of WALES has no wish or intention to apply to the various religious bodies as such or to use them as instruments for promoting his fund. There is no doubt that it is the wish of His Royal Highness that the Commemoration Fund which he has so graciously organised for the good of hospitals should interfere as little as possible with the regular channels through which the ordinary incomes of these institutions flow. And it is obvious that this non-interference with other channels will be a main test by which the public will judge of the value of the Commemoration Fund. At any rate, this is the test which will infallibly be applied by those who are responsible for the finances of hospitals. What they hope for is to receive all the ordinary income and a handsome addition from the PRINCE'S Fund. We have heard of some subscribers lessening their other subscriptions because they were contributing to the Commemoration Fund. This clearly was never intended by the PRINCE of WALES or his colleagues, and we cannot believe that it will obtain to any great extent. We trust that these considerations will suffice to convince our contemporary that the coincidence of Hospital Sunday and what must be known as the QUEEN'S Sunday is altogether a happy one. No congregation would like to separate on such a day without an offertory expressive of deep gratitude for the progress of the nation in everything that constitutes civilisation and humanity. The preachers will have no more telling point to make than the sympathy of HER MAJESTY in all the sorrows and sicknesses of her people and her constant appreciation of the progress of the healing art in making life longer and happier.

Annotations.

"Ne quid nimis."

PAYMENT OF CORONERS' JURIES.

THE absence of any means of remunerating those who form coroners' juries has long been a pressing question; it now threatens to become a burning one. At the conclusion of an inquest recently held by Dr. Wynn Westcott, at the Hackney Coroner's Court, the foreman of the jury complained that he had lost 6s. by attending. On the coroner remarking that it was a good job they did not come often he received for reply, "We come quite often enough why can't you pay us?" The coroner replied that he would, but he could not, while the county council could, but would not. This is strictly correct. According to Jervis on Coroners, fifth edition, p. 15, "There is no express provision entitling the jurors to remuneration, but in many places the authorities have allowed a fee to be paid to them." It was so formerly in a large and important northern provincial town, and we are authentically informed that in the "fifties" a long single file of "gentlemen," not only willing, but anxious, to earn the coveted shilling could be seen waiting in all weathers outside the old coroner's court, although only twelve were wanted, and their selection involved the unpleasant duty of viewing several dead bodies and of listening for some hours to the evidence.

Readers of the late Albert Smith's popular tale, "Christopher Tadpole," may remember how a medical man induced an unwilling innkeeper to receive the corpse of a man killed by an accident by reminding him of the probability that the twelve jurymen would spend twelve shillings in drinking. The incident at Hackney ought never to have occurred, and it certainly ought not to be repeated before Dr. Westcott or any other coroner. Although the coroner's court is one of first instance, and many cases begin and end there, the coroner is in the position of a judge, and to "heckle" him is as great an impropriety as to "heckle" a magistrate, a recorder, or a judge of assize. Moreover, coroners' jurors are by no means the only persons who have to suffer loss in performing a duty to their country. Medical and lay witnesses have incurred losses far exceeding the very modest sum of 6*s.* mentioned previously as incurred by the foreman, though unquestionably that was a very serious sum for a working man to lose. The debate was wound up by the coroner saying, "The matter lies in your own hands, and by combination you can get it." The matter, we fear, is not quite so simple as Dr. Westcott makes it. By the Act of 1887 a coroner's jury must comprise not less than twelve and not more than twenty-three men. Taking the very modest sum of 1*s.* per juror per inquest or even per diem, this would mean a large additional burden to the rates. Possibly the question would then arise, Why not dispense with coroners' juries altogether, as is done in many other countries, and place the coroner in the same position as the procurator-fiscal of Scotland or the *procureur* of France? The case of Matilda Clover is recent enough to remind us that our death certification is not perfect, and that a searching inquiry into all violent, unnatural, and sudden deaths the cause of which is unknown must always form an important part of our social system, and the memorable case just alluded to was a proof of the necessity of having no deaths medically certified which are not legally entitled to be so dealt with. It may appear to be a cumbrous and harsh proceeding to summon twelve men to inquire, without remuneration, into the cause of a death which after all turns out to have been a natural one; but it is not desirable that a death due to homicidal strychnine poisoning should be certified as due to alcoholism, as happened in the *cause célèbre* already mentioned. On the other hand, a coroner's jury, wisely guided by the evidence, sent to trial a wretched murderess whom a bench of magistrates had discharged on the grounds that no jury would convict. But the woman was convicted and executed.

VINOUS FERMENTATION WITHOUT YEAST CELLS.

THERE is no more interesting group of bodies in the organic world than that of the ferments. They are remarkably complex in chemical composition and possess properties of an extraordinarily energetic character. In their power to transform one substance into a new and quite different substance perhaps the action of the so-called unorganised ferments or enzymes, as, for instance, the diastase of malt or the pepsin and pancreatin of the alimentary tract, is more wonderful than when an organism is concerned. To the organised ferments belong the bacteria and germs of disease, and also yeast, the common torula. According, however, to an exceedingly interesting research carried out recently by Dr. E. Buchner, and published in a recent number of the *Berichte der Deutschen Chemischen Gesellschaft*, the transformation of sugar into carbonic acid and alcohol is not necessarily dependent upon the presence of the yeast cells themselves. Rather would the fermentation appear to be directly due to a substance contained in the cells of the nature of an unorganised ferment, an enzyme. Dr. Buchner showed that by crushing pure yeast with sand, with the addition of water, that a liquid could be expressed which, after careful filtering, was found to act on cane-sugar like yeast—that is to say, in exciting fermentation and producing carbonic acid and alcohol in the ordinary way. The addition of chloroform in small quantity does not appear to deter the action, although some precipitation of albuminous substances results. The fermentative property of this liquid is lost when it is heated to a temperature of 50° C., a point which is close to that at which the active properties of malt diastase are destroyed. The outcome of this very important investigation would seem to be that fermentation is not directly the action of a living cell, but rather the results of the action of a liquid excreted by the living organism. The precise nature of this action and the constitution of the enzyme concerned are alike far from being understood. Dr. Buchner believes the substance to be of a proteid nature, and he has proposed to call it "zymase." The importance of this discovery cannot be doubted when the application of yeast in the arts and industries is taken into consideration. It possesses, too, a very interesting bearing on the study of the vital processes. We do not doubt that before long a substance capable of exciting alcoholic fermentation will be prepared on a commercial scale, so that instead of depending upon the uncertain action of yeast cells we may have a reliable substance yielding definite products. "Zymase" should be applicable to the estimation of sugar in urine and make this method depending upon fermentation more exact, since it will exclude errors arising from the gas produced by the living cell itself or from other sources, while, still more important, the action would be due to the presence of sugar alone, and give an accurate estimate of this substance apart altogether from the presence of other reducing substances that might occur along with it.

THE BLACK WATCH.

LORD G. HAMILTON recently, in reply to a question by Sir H. Maxwell in the House of Commons, stated that the monthly returns from India showed that enteric fever had prevailed in this corps quartered at Subathu, a hill station in the Punjab on the road to Simla, during April, May, and June, increased in July, August, and September, but diminished greatly in October, and ceased in November. Lord G. Hamilton added that the report on the health of the British troops for 1896 had not yet reached him and that he would ask the Government of India to expedite it and to furnish information as to the water-supply of all the hill stations on that route—namely, Subathu, Dagshai, Kassauli, Solon, and Jutogh. The amount of enteric fever at the hill stations in India is considerable, and at several of them seems to have been increasing of late years. At Subathu there have been several outbreaks of the fever from time to time, and the medical history of the station in this respect would indicate that it is less healthy than other hill stations in the neighbourhood. The maximum prevalence of enteric fever corresponds greatly with the period of maximum heat; it rises in April and May, falls somewhat during the rainy season (monsoon), and again rises somewhat as that season ends. During the past year there has been a relative or complete absence of rain in India, with failure of the crops and famine as a consequence, and the cases have continued to occur during the whole of the hot season. There is, of course, something over and above the effects of climatic heat to account for the origin and prevalence of enteric fever; heat is only one of the factors. The greater liability of one station as compared with another to outbreaks of this fever points to the presence of some specific cause and local insanitary conditions. A water-supply derived from wells

and springs is always liable to contamination; but it is a curious fact—and we understand that it is the fact—that the prevalence of the disease is commonly greatest in the hot season before the monsoon and directly after the monsoon. The cookhouse, filters, foulness of soil from continued occupation of a site, and the state of the native bazaars have all to be taken into account, as well as the water-supply of the station.

KISSING THE BOOK.

THE Mayor of Ripon recently announced that anyone giving evidence in the County-court might, if he wished, be sworn in the Scotch form. A new copy of the Gospels was also presented to the court, and it was suggested that a bacteriological examination should be made of the cover of the old one, which had been in use for sixty years. The examination was accordingly undertaken by Mr. F. W. Richardson, consulting chemist to the Bradford Corporation. The result showed that besides various moulds there were present the micrococcus pyogenes albus and aureus, but it is comforting to know that not one of the specific germs of the communicable diseases was found. Kissing the book is a filthy and useless custom and the Scotch form of oath-taking is, as we have over and over again insisted, infinitely preferable from every point of view.

A NEW MEDICAL CORONER.

WE are glad to be able to congratulate Dr. Lovell Drage upon his election as coroner for the St. Albans division of Hertfordshire, in succession to Mr. Brabant, a solicitor. Dr. Drage was unanimously selected by the general purposes committee of the Herts County Council. We have invariably pleaded in these columns for the principle that a coronership should be held by a medical man, and therefore it is with pleasure that we record the result of the present election. Dr. Drage and his father are both well known and esteemed practitioners in the county, and especially at Hatfield, where Dr. Drage the elder has been established for nearly fifty years, and the new coroner for some thirteen years. In addition to his recently conferred office Dr. Lovell Drage has been re-elected for the eleventh time as medical officer of health of the Hatfield district, his salary being raised by £20 per annum.

THE SCLEROGENIC TREATMENT OF TUBERCULOUS AFFECTIONS.

WE are indebted to Dr. T. Sematzky [1] for taking up and fully discussing this subject. The method of treatment, which consists of deep injections of chloride of zinc around the diseased part, was first introduced by Professor Lannelongue of Paris in 1891. During the years 1893-96 thirty cases of every variety of tuberculous disease were thus treated by him. From these, however, ten, the observation of which could not sufficiently be carried out, must be deducted. Of the remaining twenty, in ten cases highly satisfactory results were obtained, in seven fairly good ones, and only in three no effect whatever resulted. It is noteworthy, that the presence of pulmonary tuberculosis greatly reduces the chance for this local treatment. The solution used by Dr. Sematzky for these injections was of 1 in 10 strength, and according to the age of the patient from seven to ten drops were injected in a number of places (from twelve to twenty) around the periphery of the affected area. As regards the form and technique of the operation he, on the whole, followed the rules laid down by Professor Lannelongue in his first detailed communication upon the subject to the Academy of Sciences (July 7th, 1891). In some respects, however, he was forced by experience to modify them. For instance: 1. As to the time of repeating the injections, he did not wait as long as three weeks, as was recommended by Professor Lannelongue, but performed a second injection as early as on the seventh or even third day after the first injection, being guided by the indication if the pains did not cease within that period. 2. The administration of anæsthetics he regards as quite unnecessary in adults, and even in children the operation can be easily done without them, since the pain is merely that associated with all subcutaneous injections; indeed, they were slight and fugitive in character in almost all cases of his observation. 3. By observing rigid aseptic precautions the appearance of swelling, redness, and signs of any inflammatory reaction, as described by Professor Lannelongue, taking place in the vicinity of the injected area are avoided. Dr. Sematzky was accordingly able to employ an immobile dressing immediately after the injection, which proved to be exceedingly useful. The skin was first covered with collodium elasticum or traumaticin, and a solution of silicate of potash served for the immobile bandage. Professor Lannelongue's statement that this mode of treatment has no effect, or little, on the general health we find so far fully confirmed by Dr. Sematzky's record, but in the matter of the action of chloride of zinc upon tuberculous tissues he greatly differs from the first-named observer's opinion. Of course, he acknowledges the fact that it gives rise to a condition of sclerosis, but what is fatal to the existence, or at any rate paralysing to the activity, of the bacillus is, according to the writer, the great antiseptic power of which that drug is possessed. At the conclusion he remarks that this method of treatment, on account of its being very simple and easily accessible to every practitioner, deserves far more attention than it has as yet received, and if employed at an early period, and especially while the formation of granulations sets in, good results will always follow.

[1] "Ljetopiss Russkoj Chirurgyi, vol. xii., part ii., 1896.

INFECTED WELLS AND TYPHOID FEVER.

THE corporation of Great Yarmouth has just escaped being mulcted in damages for having been the unwitting means of causing typhoid fever in the course of its prosecution of a very necessary sanitary improvement, which was intended to have a precisely contrary result. The Court of Queen's Bench was occupied for three days in hearing the evidence upon this point. It appears that in the first week of January, 1895, a new sewer was being laid down in Queen-street, and that shortly afterwards a resident in this street complained that the water in a well situated in the basement of his house was foul and that he and others had been made ill by its consumption. He attributed the contamination of the water to percolation of sewage which was alleged to have found its way into the trench dug for the reception of the new sewer. A month later the complainant, Mr. Durrant, sickened with typhoid fever, from which he died on March 1st, 1895. An action was brought by his executors claiming damages from the corporation for having through their negligence caused the pollution of the well and the death of Mr. Durrant. Without entering into the question as to whether the consumption of this water was the cause of his fatal illness or not, and even admitting this possibility, the defence went to show that the well could not have been contaminated by the temporary disturbance of the soil thirty-six feet distant, but that it was, and probably had been long, fouled by leakage from a privy situated at a higher level, only sixteen feet away. For after the well had been daily pumped out for a month the water remained still highly impure. As Mr. Justice Hawkins remarked, the poisonous contamination of the well was a singular coincidence at the time of the progress of the works, and the jury, taking a reasonable view of a question in which

their sympathies must have tended to the other side, gave a verdict for the defendant corporation. We trust that this will encourage this sanitary authority to proceed vigorously with the work of closing these wells and privies, which have long been a standing reproach to Great Yarmouth, and the existence of which is a serious danger to health. It is only surprising that typhoid fever is not more prevalent than it is in a town where facilities for the contamination of drinking-water have so long existed.

STREET NOISES.

WE offer our sincere condolences to Mrs. Dickens of Egerton-place and Mr. Smith of Egerton-crescent. These householders, in common with a number of others in London, are much annoyed by organ-grinders. They recently endeavoured to get one of these pests to move on, and when, as is the custom of organ-grinders, he refused, they gave him into custody. Now, we have little sympathy with organ-grinders, but in this case the chief offender was not the organ-grinder, but the Honourable FitzRoy Stewart, who lives at 10, Egerton-gardens. This gentleman deposed that he "had a family of young children all fond of music and, like himself, pleased to hear the organ in the street, and he gave the man 6*d*. to come and play in front of his house, out of hearing of the residents in Egerton-place; but he did not know that anyone was ill. He wished to assert the right to have musicians in front of his own house." Mr. Sheil remarked that if Mr. Stewart was so fond of organs he should have them inside his house; he then fined the organ-grinder 40*s*., which Mr. Stewart rightly enough paid. Although there seems to be, we are sorry to say, great uncertainty as to the law with regard to street musicians, there is little doubt that if Mr. Stewart continues to pay fines for organ-grinders he will find it cheaper to indulge his taste for music at some of the excellent concerts which are given in the metropolis.

RADIOGRAPHIC DERMATITIS WITH OSTITIS.

NOT the least instructive among the results obtained by radiography are those which illustrate its direct action on living tissues. A sufficient number of cases of Roentgen dermatitis have now been recorded to enable us to form a fairly clear idea of the pathology, if not the etiology, of this peculiar lesion. It is clear that in it we must recognise a form of slowly destructive, recoverable, but not very tractable, inflammation of the skin in all its layers. In most cases it appears that this is all. Sometimes, however, a deeper effect is evident. A paper published by Mr. T. C. Gilchrist in the February number of the *Bulletin* of Johns Hopkins Hospital, Baltimore, is of particular interest in this connexion. In it a case of x ray dermatitis is very fully described and illustrated by excellent radiographs. The patient in this instance was a healthy-looking man, thirty-two years of age, who in using a radiographic apparatus had frequent occasion to expose his right hand and forearm to the x rays for varying periods, latterly for four hours daily. The result was an extensive, puffy, dry inflammation of the skin accompanied by deep brown pigmentation, exfoliation of the epidermis, and considerable pain. Tactile sensation was markedly diminished, voluntary movement was either abolished or where retained was difficult and painful, there was marked thickening of the first and second phalanges, and tenderness over the metacarpals and the wrist joint. A radiograph taken of this hand showed, as compared with one of the normal left hand, thickening of the bones of the phalanges and metacarpals themselves, with some irregularity of outline suggesting strongly the progress of a slow osteal or periosteal inflammation. These bones were also less diaphanous than those of the left hand. The intervening joints likewise appeared to be occupied by a relatively denser medium, evidently due to thickening of their bone-surfaces. Mr. Gilchrist, in discussing the probable causation of these phenomena, attributes considerable importance to the influence of idiosyncrasy, and suggests that the active irritant itself consists of metallic particles (platinum in this case) conveyed by the kathode rays piercing the bulb of the apparatus and impinging on the vital tissues. It is to be noted, however, that no platinum was found in pieces of epidermis taken from this patient and subjected to chemical analysis. It is difficult, moreover, to admit the penetrative power claimed by this theory for metallic particles and to reconcile it with the fact that x ray dermatitis has been produced even in skin protected by clothing. None of the various explanations put forward as accounting for the changes in the skin can, so far, be accepted as entirely satisfactory. Tesla's view, that they are due to ozone generated in contact with the skin, is, as the writer of this paper says, incompatible with the changes in the bones. Professor E. Thomson[1] argues with some reason that in his own case they could not be due to electrical brush discharges, as the potential was low and no sparks were perceptible. Such an explanation seems also to be hardly compatible with the delayed onset and gradual development which commonly characterise this form of lesion of the skin. It is probable that we come nearer to the truth in ascribing this change to the action of luminous rather than caloric rays. The analogy of sunburn which has been attributed to the action of violet rays affords a suggestive parallel. As mentioned by Mr. Rushton in THE LANCET of Aug. 15th, 1896, there is ground for the assertion that luminous solar rays have a considerable power of penetration and that they are capable of producing a form of dermatitis. Mr. Hutchinson's observations in the same field of study also tend to confirm this theory. Whether light thus acts by a process of ozonisation is still open to conjecture. If it does so we seem to be in contact with another secret of nature—namely, the antiseptic property of sunlight. The whole subject doubtless calls for fuller investigation, and we must be content for a time to speak respecting it with some uncertainty, but the facts we have referred to are at least suggestive of a course which such investigation may profitably follow.

ENGLISH-MADE THERMOMETERS.

IN these days of pessimism as to the future of British industries a letter published in the *Times* of Tuesday last on the manufacture of accurate thermometers, and the facts contained therein, will be welcome reading to not a few. In the letter referred to Mr. J. J. Hicks expresses surprise at the statement of Professor Rücker (who acted as spokesman of a deputation to Lord Salisbury to urge the need and importance of establishing a national physical laboratory in this country) that no high-class mercurial thermometers are now made in England and that they are made in Germany. We were under the impression that the very reverse was the case, and that reliably graduated instruments could be obtained only from an English maker. It is a fact worth noting, also, that a very great number of thermometers are sent to Kew to be verified, and that in a great many cases they are certified after very careful testing to be without a single error, while in the case of errors the average deviation is never more than one degree. It is satisfactory, moreover, to learn that in English glass tubes we have the best possible that can be obtained, so that, to quote one instance, a capillary tube fifty-four inches long may be obtained without the slightest variation in its tiny calibre. English glass is said also to be clearer in the bore, while Jena glass is more liable to

[1] Vide THE LANCET, Jan. 16th, 1897, p. 195.

error due to contraction than English flint glass. It is quite true that if these statements, which an authority like Mr. Hicks very properly traverses, were correct some weight would be given to the argument for the establishment of a national physical laboratory in this country. Doubtless, however, Germany can produce a cheaper article, but is not that largely attributable to our apathy in nationalising scientific research and pursuits? And this, to our thinking, is a much more forcible argument.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

A WEEK'S residence in the country or at the seaside involves an outlay beyond the means of a considerable proportion of London working women, although it is unquestionable that hardly any section of the community is more in need of this kind of relaxation. A large field is therefore open to any philanthropic organisation willing to render assistance in enabling these poor people to benefit, even for a few days, by the wholesome influence of rural surroundings. The Factory Girls' Country Holiday Fund, which has now completed the ninth year of its existence and which during 1896 sent 1050 girls and women to the country or the seaside for an aggregate period of 1730 weeks, has undertaken a good work and thoroughly deserves support. The secretary is Miss Canney, St. Peter's Rectory, Saffron-hill, E.C. The income for the year was £1211 and the expenditure £1014.

THE BATHS OF LUCCA.

MR. HERBERT DANVERS sends us an account of the Baths of Lucca, which he says are much neglected. The thermal baths, which are within fifteen miles of Lucca, have been renowned from very early times, and their praise dates back to the year 983 A.D. There are two good hotels and a casino with a reading-room, and other attractions, and the springs are five in number, the temperature ranging from 98°F. to 129°F., and in constitution very much resembling those of Bath. They are fitted with every modern appliance for the treatment of disease by douches, electricity, &c., and vapour baths have been erected upon the system in use at Bath. The waters are strongly recommended in cases of renal calculus, gouty and rheumatic affections, and certain forms of skin diseases. Living is cheap, the leading hotel only charging from six to eight lire per diem for pension, and the climate and scenery are charming. The season is from May to September, and at present there is no railway within nine miles, but it is expected that by August the proposed extension will be completed. We only hope that this "development" will not, as is too often the case, spoil the place by converting it into a haunt of trippers and the *nouveaux riches* of all countries.

THE JENNER NATIONAL MEMORIAL.

THE meeting to be held on Wednesday next in the theatre of the London University, and presided over by the Duke of Westminster, ought to be one of considerable interest. The medical aspect and bearing of Jenner's momentous work will be powerfully expounded by such speakers as Lord Lister and Professor Michael Foster. And the public and State aspects of it will be dealt with by speakers of eminent authority in matters affecting public law and public health. Lord Herschell, the chairman of the recent Royal Commission on the Vaccination Acts, Sir Alfred Lyall, and Lord Playfair will speak to these points. The movement is a little belated. Not only is it a year beyond the centenary of Jenner's discovery, but it will have to encounter the competition of many forms of commemoration of the Queen's sixtieth year as a reigning Sovereign. But, even so, under the auspices of so enlightened and public-spirited a chairman and with such advocates, it is not yet too late to put the country right in regard to one of the greatest life-savers of the world. The following resolutions will be moved: (1) That the present is an appropriate time to inaugurate a work of national utility in honour of Edward Jenner; and (2) That a subscription be set on foot with the view of promoting, in connexion with the British Institute of Preventive Medicine, but in a manner distinguished by Jenner's name, researches on the lines which he initiated.

A RECURRENCE OF INFLUENZA.

THERE seems no doubt that influenza is amongst us again. Typical febriculous attacks, mostly of short duration and affecting more than one member of a family, are the indications. Generally there is some catarrh—nasal, pharyngeal, or bronchial—with more or less of the unpleasant pains of the disease. But often there is nothing but a quick sharp pyrexia occurring without rhyme or reason and leaving a weakness of the patient disproportionate to the duration of the acute stage. It is gratifying to know that the graver forms and sequelæ of the disease, as seen in former epidemics, do not often occur.

LIFE AND DEATH IN WEST LONDON.

A STRIKING comment on Mr. Sherwell's recently published book is supplied by the report of the medical officer of health for Kensington dealing with the four weeks Jan. 31st to Feb. 27th. The death-rate for the whole district is 15·9 per 1000; that for the North-West district 28·4 per 1000; and for the "special area" it reached the alarming figures of 56·2 per 1000. The causes of death in this area were mainly diseases of the respiratory organs. Kensington as a whole is admirably worked as regards its sanitary organisation; therefore, we suppose that some legal difficulties stand in the way of improving matters in this special area. The vestry are most energetic and by no means extravagant, for though the rates are high this is mainly owing to the enormous expenditure by the School Board and the County Council, as any ratepayer may see for himself by the statements on the demand notes.

THE HEALTH OF THE ARMY IN INDIA.

THE facts connected with the condition of our British Army in India presented in the vigorous and masterly report of the Departmental Committee of the House of Commons have, as may well be imagined, created a good deal of sensation. It is understood that next week Mr. Balfour will make a statement on the subject with regard to the steps which the Government intends to take, and there will be a meeting beforehand of the Service members of the House of Commons. Meanwhile, it is announced that there is to be a conference of the Liberal members to consider the action they will adopt in regard to the report. Although several Liberal members are believed to have been seriously impressed with the history of the facts that have been set forth in the papers presented to Parliament, it is understood that the Liberals intend to oppose the recommendations of the Army Sanitary Commission, taking their stand upon the fact that the amount of venereal disease among the troops in the United Kingdom has been less, instead of greater, than it was when the Contagious Diseases Acts were in force in this country. But, even assuming—for the sake of argument—this to be the case, it is irrelevant to the question at issue, which is the increased and excessive amount of venereal disease among the European troops in India and the best way of dealing with it. That is the point, and not the state of the army at home in this respect, with which this country and the Government

are concerned. It is needless to say that this is no party question, but one for the serious consideration of men of all parties, and we have reason to hope and believe that it will be approached in that spirit.

THE HEALTH OF LORD SALISBURY.

WITH reference to the recent indisposition of the Premier we are able to state that on Friday, March 19th, Lord Salisbury was taken ill after dinner with aching all over and a feeling of *malaise*. On Saturday there was moderate pyrexia, with loss of appetite and intestinal irritation. On Sunday the symptoms abated, and on Monday the temperature had become normal and he was able to be up and dressed. His lordship has previously suffered from influenza, and his recent attack was probably a slight recurrence of the disease.

THE "DEVELOPMENT" OF TRAFFORD PARK.

As will be seen from the letter of our Manchester correspondent in THE LANCET of March 20th (p. 843), Trafford Park is to be "developed." This is the modern euphemism for "spoiled." The estate consists of about 1200 acres with a magnificent old house, and the latter is to be converted into a hotel. The developments include the proposed erection of such health-giving objects of beauty as flour mills, oil tanks, seed-crushing mills, and works for the distillation of tar, also wharves and railways. Surely it is not too late for something to be done to prevent such an outrage, for an open space such as this is of absolutely incalculable value to the dwellers in the neighbourhood. It seems to us that a portion of the funds being collected for various objects in celebration of Her Majesty's reign might well be devoted to buying out the present owner or owners and setting this magnificent "lung" free to do its beneficent work for the benefit of both the present generation and those yet unborn.

THE REGISTRATION OF MIDWIVES.

A MEETING was recently held at London House in support of the Midwives Registration Bill. Mrs. Creighton presided, and is reported as saying that "what surprised her most was that there should be the least need for such a meeting." She then went on to explain the objects of the Bill, saying that what they wished to prevent was that a person should deceive the public by assuming a position she was not entitled to occupy. Dr. Champneys spoke of the necessity of some measure for the registration and supervision of midwives, and a resolution pledging the meeting to support the Bill now before Parliament was carried. We must say that Mrs. Creighton's naïve confession of ignorance as to why there is opposition to the Bill somewhat surprised us, for surely it is incumbent upon the supporter of a measure to make himself or herself acquainted with the point of view of the opposition. As we have many times previously said, training and supervision are necessities, but we do not think the present Bill is the best way to procure them.

A GOOD IDEA.

ACCORDING to a special correspondent of the daily press the English and American residents in Antwerp, backed, we are glad to say, by a section of the Belgian inhabitants, have been agitating for some time to get an abattoir for horses erected close to the docks, and, what is still more gratifying, the authorities have nearly decided to build one. This will not only spare the feelings of the inhabitants, now daily outraged by the mournful procession of wretched, broken-down horses to the present slaughter-house, but will also render the last moments of these poor animals' lives a little less miserable. They are generally in the worst possible condition, and the long, weary tramp to the abattoir after having undergone the sufferings of a sea voyage is by no means the least of the miseries they have to encounter. In our opinion we are by no means blameless on this side of the North Sea. We do not in the least object to people eating horseflesh, if they like it, and provided they do not get it when they ask for beef or mutton; but we do think that the export trade in live worn-out horses should be stopped. We make a virtuous protest about the treatment of horses in a Spanish bull ring, and it must be owned that it is not a pleasant spectacle, but any way there the agony is by comparison but short. If anyone is permitted to sell horseflesh to foreigners to eat, and it is supplied from this country, it should be killed upon this side.

THE METROPOLITAN ASYLUMS BOARD AND PAUPER CHILDREN.

THE Metropolitan Asylums Board has intimated its willingness to undertake the administration of the new order of the Local Government Board for the benefit of Poor-law children suffering from ophthalmia, diseases of the skin and scalp, defective intellectually or physically, ordered by justices to industrial schools, or otherwise requiring special treatment as convalescents. The Metropolitan Asylums Board accepts this extension of its duties professedly in the interest of economy. We are not aware that the Board has shown any special faculty of economy in its past history, but perhaps it may be so impressed with the costliness of its own past work as to avoid errors into which an inexperienced and brand-new body might fall. One effect of this new departure wil be to give a clearer Poor-law character to the work of the Metropolitan Asylums Board. We do not altogether object to this aspect of the new arrangement. Whatever the legal definition of pauperism, the practical conception of it must be the resort to institutions supported by rates and taxes, and such resort should be restricted to those who have no reasonable alternative. We do not doubt that under the Metropolitan Asylums Board the cases of disease will be much better cared for than at present. But that such huge groups of diseases should acquire such incurable intensity under the care of the guardians is a condemnation, concurring with others, of their failure from a medical and sanitary point of view.

THE NEW REGISTERS.

WE have received copies of the Medical Register for 1897, and the Dentists' Register for the same year. It is evident that—despite the cry about the overcrowding of the profession and the consequent lack of employment to be found, remunerative employment that is—there is no appearance of any falling off in the number of candidates for admission to the ranks of the profession. Thus in 1896, besides the 52 names restored to the register, there were 1385 new registrations. The removals from death and other causes numbered 560, making a total increase of 877 names, so that the number of practitioners in the United Kingdom is now 34,478 as against 33,601 in the previous year. We fancy, however, that the number of names removed by death is understated, and could point out more than one instance of a name being retained after death. With regard to the Dentists' Register, the number of names is less than it was in 1896 by seventy-five, and the total number on the register is now 4860, as against 4935 for last year. This diminution is accounted for by the fact that only those persons holding the qualification of Licentiate in Dental Surgery can be added to the register, while the erasures affect not only licentiates but all that large class who were in "practice" before 1878. The percentage of Licentiates in Dental Surgery to the whole number on the register is constantly

increasing, being now 31·25, as compared with 28·88 in 1896 and 9·13 in the year the Dentists' Register was first published—namely, 1879.

THE following appointments have been made by H.R.H. the Duke of York: Mr. Frederick Treves, F.R.C.S. Eng., to be Surgeon-in-Ordinary to His Royal Highness; and Dr. Alan Reeve Manby to be Surgeon-Apothecary to His Royal Highness at Sandringham.

THE portrait of Lord Lister, P.R.S., by Mr. W. W. Ouless, R.A., is now finished. The presentation will take place in the lecture theatre of the Royal College of Surgeons of England, Lincoln's-inn-Fields, at 5 P.M. on Monday, March 29th.

MR. GILL, a foundationer of Epsom College, has been elected to a mathematical scholarship at Magdalene College, Cambridge.

THE Bill for the Registration of Midwives was set down for second reading on Thursday night.

The Lancet Special Commission

ON THE

METROPOLITAN WATER-SUPPLY.

VI.[1]

THE SOUTHWARK AND VAUXHALL WATERWORKS COMPANY—*continued.*

Pumping arrangements.—The work to be done is: (1) raising water derived from the natural filtration system and from the river to filters 8 and 9; (2) pumping unfiltered water to Battersea; and (3) pumping filtered water to Nunhead and to the districts supplied. The water is raised to the filter beds by a pair of inverted compound-geared engines and a set of tri-compound-geared engines. The head of water worked against is 16 ft. Three inverted direct-acting Cornish engines of the Bull type are used for pumping to Battersea. The head of water worked against is 135 ft. Two single-acting beam engines with double-acting pumps and two pairs of direct-acting compound inverted rotative engines are used for pumping to Nunhead.

Distribution of the water from Hampton.—From Hampton the water is distributed in two different directions.

The filtered water passes in a 42-in. main in an easterly direction along the high road which passes just to the north of Hampton Court Palace to Hampton Wick. At this point the main goes in a tunnel under the Thames to Kingston. The tunnel under the Thames is in the London clay. It can be inspected from either end, and ladders pass down to the bottom of the tunnel. The tunnel itself is kept dry by a small water-pressure engine worked by the pressure in the main. From Kingston the main passes in a direction nearly due west close to Coombe House and by Raynes Park to Merton and Streatham, then in a north-westerly direction to the north of Lower Norwood and Dulwich College to Nunhead.

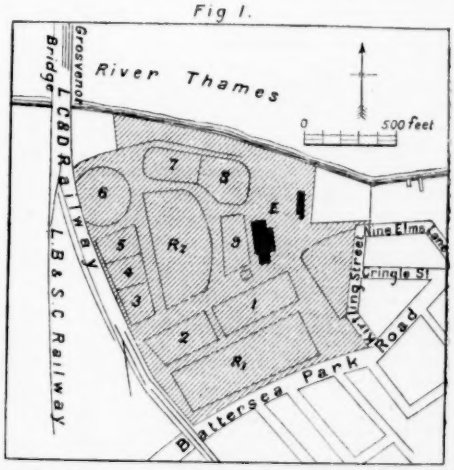
The unfiltered water passes from Hampton in a 36-in. main. There is another main, 30 in. in diameter, which conveys filtered water from Hampton for the supply of the western portion of the Company's district. This is laid parallel with the 36-in. main just mentioned. The two mains pass in a north-easterly direction to Twickenham, then under the Thames just below Richmond Bridge, and then in an easterly direction to Wandsworth. From Wandsworth the 30-in. main passes through Clapham, Kennington, and Camberwell to the service reservoirs at Nunhead. The 36-in. main from Wandsworth takes a more northerly course and conveys the water to Battersea, where it is filtered.

[1] Nos. I., II., III., IV., and V. were published in THE LANCET of Feb. 20th, 27th, and March 6th, 13th, and 20th, 1897, respectively.

Wandsworth.—The station at Wandsworth is situated on the banks of the Thames and of the Wandle where that stream joins the river. The water is brought from Hampton in the 30-in. main just described, and reaches Wandsworth at a pressure of about 100 ft. At Wandsworth the pressure is raised to 200 ft. or 220 ft., and the water goes to supply the higher parts of Wimbledon and the high service reservoir at Nunhead. The water is pumped by two direct-acting, inverted, quadruple expansion, rotative engines, for which the steam is generated by four Badcock and Wilcox tubular boilers, which are usually worked at a pressure of 120 lb. The engine house is built of white bricks with terra-cotta facings, and the inside is lined with shiny, white tiles and is very well lighted. There is at this station an engineer's work room, a blacksmith's shop, and a good lodge.

Battersea.—The water is delivered from Hampton by a 36-in. main and passes into three reservoirs, which have an area of twelve acres and are capable of containing 46,000,000 gallons of water (Fig. 1, R_1, R_2.) From the

Fig 1.



Battersea Station. R_1, R_2, Reservoirs. 1 to 9, Filter beds. E, Engine house and stand pipe.

reservoir the top-water passes through pipes which are chained to floating buoys, into the filters (Fig. 1, 1 to 9), which have an area of eleven and a quarter acres. From Battersea the water to the district is supplied by one 27-in., one 24-in., three 15-in., and one 12-in. mains. These are not all shown in the map. For the supply of the high-level districts the head of water worked against is 330 ft. and the water is pumped by two beam engines, which have cylinders of 55 in. and work pumps of which the diameters are 15¾ in. and 15 in. respectively and have a stroke length of 8 ft. Three other engines which supply the district work against a head of 170 ft., the water (or some of it) passing through a stand-pipe 170 ft. in height. The description of these engines may be summarised thus:—

—	Diameter of cylinder.	Diameter of pump.	Length of stroke.
No. 3	68 in.	33 in.	10 ft., 0 in.
No. 4	64 in.	33 in.	9 ft., 6 in.
No. 5	112 in.	50 in.	16 ft., 0 in.

The engine No. 5 is said to be the largest of this type in England and to be capable of raising 12,000,000 gallons of water daily, working against a head of 170 ft. There is also a direct acting engine of the Bull type capable of lifting 5,200,000 gallons of water, working against the same pressure. The Battersea station contains carpenters' and blacksmiths' shops, cottages, and a large yard which contains stores of pipes. The sanitary arrangements here are not strictly in accord with modern ideas. The station will not be used after the completion of the alterations which are now in progress at Hampton.

Streatham.—The station is situated in a field not far from Streatham-common railway station on the London, Brighton, and South Coast Railway. The top of the well is 110 ft. above ordnance datum. The depth of the well shaft is 148 ft., and below this it is lined with cylinders to a depth of 242 ft. The water level is about 45 ft. from the surface. A careful record was made of the strata cut through. The results are given below.

	Thickness. Ft.	in.		Depth. Ft.	in.
Gravel and mud	10	0	.....	10	0
London clay (153 ft. ?):—					
Yellow clay	6	0	.....	16	0
Blue clay	62	0	.....	78	0
Blue clay and sand	25	0	.....	103	0
Claystone	1	0	.....	104	0
Blue clay	22	0	.....	126	0
Blue clay and sand	33	0	.....	159	0
Basement Bed (in part at least) :—					
Pebbles (water)	1	0	.....	160	0
Pebbles and shells	0	3?	.....	160	3
Conglomerate	0	6?	.....	160	9
Black clay and shells	0	9?	.....	161	6
Conglomerate	0	6?	.....	162	0
Hard conglomerate	1	0	.....	163	0
Woolwich and Reading Beds (45½ ft.?) :—					
Black clay and shells	1	0	.....	164	0
Black clay and sand	0	4?	.....	164	4
Black clay and shells	3?	0	.....	167	4
Hard shells	0	6?	.....	167	10
Black clay and shells	1	8?	.....	169	6
Hard layer of shells	0	3	.....	169	9
Oyster-shells	1	3	.....	171	0
Green sand	2	6?	.....	173	6
Mottled clay	2	6?	.....	176	0
Conglomerate, shells, and quartz	0	3?	.....	176	3
Clay, shells, and grey sand	5	6	.....	181	9
Sandy clay	1	3	.....	183	0
Black clay and shells	1	7?	.....	184	7
Mottled clay	19	5	.....	204	0
Hard, peaty clay, and pebbles	0	6	.....	204	6
Clay, stones, and green sand	2	0	.....	206	6
Thanet Beds (35 ft.):—					
Hard green sand	4	6	.....	211	0
Very hard sandstone	0	6	.....	211	6
Dark sand, tinged with grey (water) ...	0	6	.....	212	0
Grey sand...	12	9	.....	224	9
Black sand	2	8?	.....	227	5
Grey sand	13	1?	.....	240	6
Flints	1	0	.....	241	6
Upper Chalk (193½ ft.):—					
Flints, with little chalk (specimen, with one flint slightly green-coated). ? Some doubt about this part	8	6?	.....	250	0
Soft white chalk without flints	11	0	.....	261	0
Soft white chalk, with flints every 2 or 3 ft. (some specimens compact) ...	32	0	.....	293	0
Large flints, with but little chalk (white)	13	0	.....	306	0
Chalk (specimens white and some hard), with beds of flints every 2 or 3 ft.	32	0	.....	338	0
Very hard, grey chalk (specimens white) flints	8	0	.....	346	0
Very hard, grey chalk, with hard stone or boulders (specimens white, and some very hard)	23	0	.....	369	0
Very hard chalk, with stone like limestone (specimens white, one hard) ...	15	0	.....	384	0
Very hard, grey chalk, with dark, dirty (clayey in specimen) partings (specimens white, with flints)	25	0	.....	409	0
Very hard (firm), grey chalk, with stone or chert...	31	0	.....	440	0
Passage Beds and Chalk Rock. (Specimen of chalk and flints)	23	0	.....	463	0
Middle Chalk (219 ft.):—					
Hard, grey chalk, with dark (grey) partings, mixed with stone or chert (many specimens, one, from 525 ft., bedded) ...	69	0	.....	532	0
White chalk, much softer (specimens firm)	19	0	.....	551	0
Hard chalk	19	3	.....	570	3
Hard grey chalk with dark partings ...	48	9	.....	619	0
Hard chalk with dark partings and fossils	27	0	.....	646	0
Very hard, stony chalk	22	6	.....	668	6
Very hard, stony chalk, with fossils ...	2	0	.....	670	6
Hard and rather green chalk, with few fossils (specimens with irregular greenish clayey partings) ? Melbourn rock ...	11	6	.....	682	0
Lower Chalk (182½ ft.):—					
Very hard chalk, with green partings ...	10	6	.....	692	6
Chalk, softer, working up into pipeclay ...	35	9	.....	728	3
Hard grey chalk, working up into stiff pipeclay...	57	6	.....	785	9
Dark grey chalk, very hard, working up into pipeclay	21	3	.....	807	0
Dark, marly chalk, working into a stiff putty. (Specimens from 786 ft. to 840 ft. were greyish and some with curved, marly fracture)	3	0	.....	840	0
Chalk marl, or gault clay, with shells (specimens marly chalk or grey chalk marl)	14	0	.....	854	0
Very hard marl rock band (specimen hard grey chalk)	1	0	.....	855	0
Chalk marl or gault clay (specimen hard grey chalk marl, more sandy than that above)	9	6	.....	864	6
Upper Greensand (28½ ft.):—					
Specimens of light-grey (rather greenish) calcareous sandstone, with glauconite grains: sometimes grains of mica; varying slightly	24	6	.....	889	0
Specimens much the same as the above; grey calcareous sandstone, with small, blackish glauconite grains and small grains of mica...	4	0	.....	893	0
Gault (188½ ft.):—					
Clay; specimen from top, hard, with green grains and a phosphatic nodule...	8	0	.....	901	0
Greensand; probably only a thin layer, as specimen from 903 ft. is hard clay ...	6	6	.....	907	6
Hard clay (specimen firm)	29	9	.....	937	3
Clay (specimens at 940, 960, 980, 1000, 1020, 1040, and 1050 ft., and below, all firm; with phosphatic nodules at 1068 ft., a layer at 1070 ft., and at the base)... ...	154	3	.....	1081	6
Lower Jurassic Beds (? forest marble) flat bedded (32½ ft.):—					
Hard grey and cream-coloured limestone, mostly crowded with oolitic grains of fair size, with bits of shells. Signs of plant in a trace of clay. At 1083 ft. softer, with oolitic grains dissolved out. Ostrea acuminata? at 1086 ft.	8	6?	.....	1090	0
Greenish-grey, sandy rock, softest at the base	1	0	.....	1091	0
Hard grey, calcareous sandstone	1	6	.....	1092	6
? Clayey layers lost. Limestone, with oyster-sheils, at 1094 ft.	2	6	.....	1095	0
Greenish-grey, sandy clay, with Ostrea acuminata and a small Crustacean claw	2	0	.....	1097	0
Harder specimen at 1098 ft.; but apparently softer rocks missing. Clay at the bottom	10	0	.....	1107	0
Clay, with hard bands					
Clay, with oolitic grains; more numerous in the lower part					
More like limestone, less granular... ...					
Impure limestone, with fragments of shells	6	0	.....	1113	0
Clay, with oolitic grains					
Clay					
Clay, with astarte					
Clay, with fossils (two specimens)... ...					
Clay, with shells					
More sandy clay...					
Clay (two specimens)					
Sandy clay					
Clay, with small (phosphatic?) nodules (two specimens)	7	0	.....	1120	0
Clay, much harder; calcareous					
Clay, with hard beds; harder at the base					
Oolitic limestone					
Beds of doubtful age. Grey, reddish, and purplish beds, 100 ft.; mostly with a tendency to break along planes at 25° to 30° dip.					
Pale greenish-grey, compact, calcareous, sandstone; mottled reddish and purplish lower down; then with purplish bands, showing a dip of 20°. Probably about 8 ft. missing (? clays)	10	0	.....	1130	0
Greenish-grey sandstone, mottled purplish then reddish. Probably about 10 ft. missing	17	0	.....	1147	0
Dull, reddish-purple, hard, sandy clay ...					
Grey sandstone, mostly calcareous, with thin veins of calcite...					
Greenish-grey sandstone, with some purplish mottling and veins of calcite ...					
Greenish-grey and red-mottled sandstone	6	0	.....	1153	0
Greenish-grey, bedded sandstone, with iron-pyrites in the upper part and with purplish bands in the lower (dip 35°) ...					
All these more or less micaceous					
(?) 2 ft. missing					
Hard, purplish, clayey rock					
Many feet missing	7	0	.....	1160	0
Greenish-grey, calcareous sandstone ...					
Greenish-grey sandstone, mostly calcareous, clayey at the base. Only 14 in. of core ?	15	0	.....	1175	0
Dark, dull, reddish, clayey and sandy rock. Then somewhat mottled with dark grey, and breaking unevenly ...					
A little pyrites. Small calcareous nodules at about 1180 ft. ?...					
Dull, reddish, fine-grained sandstone, mottled with pale grey. Then more of the grey. Small calcareous concretions. Then a reddish mass. Then grey, with reddish bands in bedding planes. About half missing	15	0	.....	1190	0

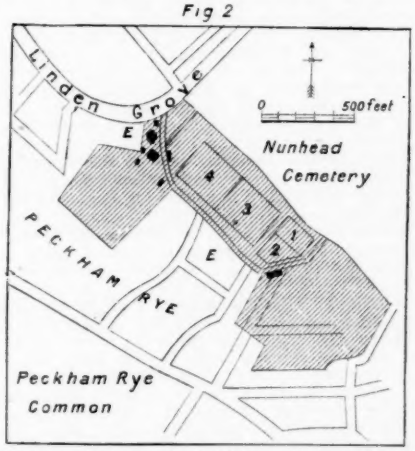
	Thickness. Ft.	in.	Depth. Ft.	in.
Reddish, clayey rock, with about 6 in. of a nodular character (?) at bottom, and greenish-grey rock. About 5 ft. of core	14	0	1204	0
Hard, greenish-grey micaceous sandstone, partly calcareous, and reddish, clayey, micaceous rock. About 5 ft. of core ...	8	0	1212	0
No specimens seen	12	0	1224	0
Red, clayey rock, with greenish-grey in the midst, partly nodular below. 4 ft. of core	14	0	1238	0
No specimens seen	12	0	1250	0
Grey, micaceous sandstone, here and there with reddish bands ... ... About 1255 ft. with fish remains (?) ... Grey and red rock as above; a few inches Light-grey, coarse, very micaceous sandstone, with black carbonaceous patches; about 20 in.	8	0	1258	0

The boring was continued to the depth of 1271 ft.; but the last 13 ft. of core were not brought up. The amount of water which it is estimated can be obtained from the well daily is 2,000,000 gallons. The water is bright and clear and has a slightly ferruginous taste. It is pumped by two double-acting lift pumps driven by two sets of triple-expansion engines, and the steam is generated by three Badcock and Wilcox boilers. In a building adjoining the engine and pump houses there is an arrangement for filtering the well water through calico, but this operation is not considered to be necessary by the Company.

Forest Hill.—This station is situated on the summit of Forest Hill, 345 ft. above ordnance datum. The reservoir is built with arches, completely covered in and turfed at the top. It is capable of storing 1,000,000 gallons of water. The reservoir was empty when visited on Dec. 10th. The residence of the assistant-engineer and a cottage for a caretaker are situated here.

Nunhead.—The station at Nunhead (see Fig. 2) contains

Fig 2



Nunhead Station, Peckham. 1 and 2, High-service reservoirs. 3 and 4, Low-service reservoirs. E, E, Engine house and offices.

reservoirs, pumping arrangements, an office, a valve house, workshops, and the residence of the engineer. The high-service reservoirs (Fig. 2, 1 and 2) are situated at the top of the hill 200 feet above ordnance datum, and they are capable of storing 6,000,000 gallons of water. The low-service reservoirs (Fig. 2, 3 and 4) are situated on the slope of the hill 168 feet above ordnance datum, and have a capacity of 12,000,000 gallons. The reservoirs are arched over and covered with turf. The engine house contains two Bull engines, which are worked by four Cornish boilers. The engines are used to pump the water to the high-service reservoirs. A fire-engine is kept at this station. It is occasionally used to empty service pipes rapidly when a pipe has burst. In such a case the fire-engine is at once despatched to the place at which the accident has happened. The brasswork here, it may be noted, is kept in a way which would be no discredit to a smart man-of-war, and the engine house, like all the newer ones put up by the Company, is extremely well lighted and airy. The valve house, which is situated near the entrance gate, contains the arrangements for regulating the direction of the water-supply; the distributing mains all pass through the house. The office is in telephonic communication with the district inspectors, with the office in Southwark Bridge-road, Streatham, Wandsworth, Forest Hill, and the Metropolitan Fire Brigade at New Cross and at Kennington, and there is a private telegraph wire to Battersea and to Hampton.

Communications with other companies' mains.—There are two communications with other companies' unfiltered water mains: (1) with the Grand Junction Company at Hampton—a 15-in. connexion; and (2) with the West Middlesex Company at Marsh-gate near Richmond—a 36-in. connexion.

Length of new pipes.—The length of new pipes ranging from 3 in. to 20 in. laid in 1895 was ten miles, and during the year 1896 six miles.

Hydrants.—The number of hydrants erected during the year 1895 was 3829, and during the year 1896 it was 4137.

Houses under constant supply.—The number of houses under constant supply on Dec. 31st, 1894, was 106,604; on Dec. 31st, 1895, 109,670; and on Dec. 31st, 1896, 112,455.

Percentage of houses under constant supply.—On Dec. 31st, 1896, the percentage of houses under constant supply was 93·75.

Average daily supply per head.—The average daily supply per head for the year 1896 was 38·39. These figures are arrived at by the Company as follows. The number of supplies afforded is 119,948, and these figures are multiplied by 7·43, which is supposed to be the average population per house in the district supplied.

Dates of maximum and minimum supply.—The following table gives the date of the maximum and minimum supplies and the average daily quantities supplied.

	Year 1895. Month.	Quantity in gallons.	Year 1896. Month.	Quantity in gallons.
Maximum ...	September	39,148,588	July	37,591,943
Minimum ...	February	26,630,684	November	31,657,101

Table of Statistical Details given by the Southwark and Vauxhall Waterworks Company for the year 1896.

SUPPLY.	Average daily supply in gallons	31,996,895
	Percentage delivered for other than domestic purposes, exclusive of waste	15 to 20
	Number of houses supplied	119,948
	Number of houses on constant supply	112,455
	Estimated population supplied	891,213
RESERVOIRS.	Number	4
Subsiding and storage unfiltered water	Area in acres...	26
	Available capacity in gallons	136,000,000
Storage filtered water reservoirs..	Number	4
	Capacity in gallons	18,000,000
ENGINES.	Number	16
	Horse power	3,200
	Greatest lift	360 ft.
	Head of pressure in the district supplied	Highest, 170 ft.; lowest, 20 ft.
WATER-PIPES.	Total number of miles of water-pipes	827
	Number of miles of water-pipes in the metropolis...	627
	Number of miles of streets with water-pipes constantly charged in the metropolis	160
	Number of hydrants erected within the metropolis	4137
FILTERS.	Number of beds	18
	Area in acres	20¼
	Depth of sand and other materials	5 ft. 6 in.

Area of Supply.

The Act of 1852 authorises the Southwark and Vauxhall Company to supply the following places, some of which are entirely supplied, some partly supplied, some not supplied:—

Supplied: St. Thomas, Southwark; St. John, Southwark; and St. Olave, Southwark.

Partly supplied: Battersea, Bermondsey, Brixton (Lambeth), Camberwell, Clapham, Christchurch (Surrey), Deptford (St. Paul), Dulwich, Kennington, Lambeth, Peckham and Peckham Rye, Newington (St. Mary), Rotherhithe (St. Mary), St. George the Martyr (Southwark), St. Saviour (Southwark), Stockwell, Walworth, and Wandsworth.

Not supplied: Deptford (St. Nicholas), and Streatham (St. Leonards).

The Act of 1884 authorises the Company to supply the following places, all of which are entirely supplied with the exception of one place which is partly supplied:—

Supplied: Barnes, East Sheen, Ham, Kew, Mortlake, Petersham, Roehampton, Sheen, and Wimbledon (parts above the 100 ft. ordnance contour line).

Partly supplied: Putney.

The Company also supplies water by bulk to the Corporation of Richmond.

New Works in Progress.

Hampton.—In the description of the present state of the Company's station at Hampton it was said that work was in active progress there and a plan was given showing the site of the operations (see THE LANCET, March 20th, 1897, p. 823, Fig. 1). The works are as follows: (1) two storage reservoirs, which will have a total capacity of 300,000,000 gallons; (2) a subsiding reservoir, which will have a capacity of 40,000,000 gallons; (3) seven new filters, which will have a total area of seven acres; and (4) a new engine and boiler house, which is to be supplied with engines of 1500 indicated horse power.

Merton Abbey.—A new well is being dug at Merton Abbey. The shaft is 12 ft. in diameter and the depth now reached is about 90 ft.

Raynes Park.—Boring operations are in progress at Raynes Park and the chalk has been reached.

It is proposed also to construct at Honor Oak a covered service reservoir capable of holding 60,000,000 gallons.

HISTORICAL NOTES ON MEDICINE, SURGERY, AND QUACKERY.

II.[1]

FOR a century and a half Liverpool can boast some "original" medical men, and in the present article it is proposed to give an account of some of them. In St. Nicholas's Churchyard there is or was to be seen near the gate at the middle of the south side an inscription to the memory of a medical practitioner of the seventeenth century: "Here lyeth the body of Alexander Norres of Leverpoole, professor of physick and chirurgery, who departed this life the 5th day of July, was buried the 8th, 1700." For the credit of "physick and chirurgery" it is to be hoped that this was not the Alexander Norris who was Mayor of Liverpool in 1694, and who had to beg pardon on his knees in the House of Commons for his misconduct in returning as M.P. one Mr. Thomas Brereton, who had but fifteen votes, instead of Mr. Jasper Mawdit, the recipient of 400 votes. His worship was discharged on paying fees, after being imprisoned for about seven weeks.

Two hundred years ago, when the burials in Liverpool were only 158, a popular medical man was Dr. Silvester Richmond, who, in 1692, gave £100 to erect almshouses on Shaw's-brow, the site of St. George's Hall. After his death his widow repaired them. By the way, in later days, when Liverpool was famous for its pottery, the bottom of Shaw's-brow, facing the Haymarket, was called St. John's Village. Up the south side of Shaw's-brow were the potters' dwellings. It is said that in the time of the resurrectionists these men were in the habit of handling "clay" of a sort not required in their daily work, and that they got over the churchyard wall and exhumed any newly interred bodies, taking them into their houses, and selling them to the medical students and others who purchased such "subjects." This Dr. Silvester Richmond incurred the displeasure of James II., for, at a Court held at Windsor on Aug. 14th, 1687, His Majesty, having received information of the "misbehaviour" of Oliver Lyme, deputy-mayor of Liverpool, and Silvester Richmond, a justice of the peace there, thought fit to order their removal from their offices in the town of Liverpool. Their "misbehaviour" was their opposition to the King's schemes, and both of them were restored to office after the Revolution. Dr. Silvester Richmond was a member of an old Liverpool family. He filled the civic chair in 1672, and his descendants have been connected with the town down to a recent period. On a brass-plate screwed to a seat in the chancel of St. Nicholas's Church is the following inscription: "Here lieth the body of Silvester Richmond, Professor of Physick and Chirurgery, who after near thirty years indefatigable care and successful practice in this town and country, at last exhausted that life which had been so carefully employed in the preservation of many others. He died the 16th and was interred the 19th April, 1692."

In the Norris Papers, published by the Chetham Society, it is stated that the surgeon received £8 12*s* for "seering the body" of Mr. Thos. Norris, former Mayor and Member for Liverpool, and Sheriff of Lancashire, who died at Harrogate in June, 1700. At the time of his death two of his brothers were absent in India. One, Sir William Norris of Speke, had been selected by "The English Company trading to the East Indies" as its Ambassador to the Court of Aurungzebe, "the Great Mogul." The other brother, Edward, practising as a physician at Chester, was selected as secretary to the Ambassador. Edward Norris was of Brazennose; M.A., June 1st, 1689; B.M., Jan. 19th, 1691; and M.D., March 12th, 1695. In the procession of April 28th, 1701, with which the Ambassador entered the Mogul camp at Parnella, we find: "Edward Norris, Esq., Secretary to the Embassy, in a rich palanquin, bearing His Majesty's letters to the Emperor; on each side, Mr. Wingate and Mr. Shuttleworth, in rich laced coats, on horseback." The sword of state which was borne before the Ambassador in this splendid procession is now deposited amongst the regalia at the Liverpool town hall. Dr Norris sailed, with fourteen of his brother's suite, in the *China Merchant*, a vessel bearing a rich cargo, of which 60,000 rupees in value belonged to the Company and 87,000 to Sir William Norris. The brothers again met at the Mauritius and sailed with a large fleet for England; but the *Scipio*, the Ambassador's vessel, parted company, and Dr. Norris saw his brother no more, Sir William Norris dying at sea. Although Dr. Norris returned to England, yet the calm which succeeded to perils and anxieties operated fearfully on his mind. On July 18th, 1703, his sister, Mrs. Hopwood, wrote as follows: "But the concern I am in for my poor dear mother on the account of my dear brother hath filled me with such apprehensions it is as much as I can do to bear up, though had it not been for that paper mother showed me after the unlucky thing of the banqueting house I should never have suspected anything of that kind; I hope it will wear quite off; his friends must not let him be too much alone, tho' I am in constant fear for him, God will be so merciful to him as perfectly to restore him."[2] Dr. Norris was perfectly restored. On his return the Speke estate was to the extent of two-thirds of its value pledged to the annuities of his mother and sister-in-law and the other third nearly taken up by debts. He resided for a while at Utkington, near Chester, and in 1705 married the daughter of William Cleveland of Liverpool. This lady is marked in the pedigree as his second wife (we discover no mention of the first in the Norris Papers), and after his death she is stated to have married Dr. Tarleton. The death of this doctor's first wife took place Oct. 15th, 1702, and he married again a Mrs. Norris in the lifetime of Dr. Norris. The inscription on Dr. Norris's tomb in Garston Chapel goes far to convict the Norris pedigree (to which the name of that excellent herald Lodge is, we suspect, very improperly appended) of this mistake: "Under this tomb lies interred Edward Norris, M.D., of Speek, who departed this life the 22nd of July 1726, in the —— year of his age. Also Ann, his wife, died the 3 of Jany., 1729, aged 53." They had one son, born in 1712, who it may be conjectured survived his father, yet was dead before 1736, and with him the name of Norris of Speke ceased to exist. Mary Norris, the niece, became the heiress of the whole Speke property, and being

[1] No. . was published in THE LANCET of March 6th, 1897.

[2] Mr. Thos. Heywood, F.S.A.: Introduction to the Norris Papers.

thirty-six years old married the worthless Sidney Beauclerc, fifth son of the first Duke of St. Albans, "a man of bad character." Dr. Edward Norris was returned for Liverpool to the Parliament of 1714, elected on the accession of George I., and continued to represent the town until 1722. Dr. Norris's granddaughter became the wife of Mr. Richard Pennant, M.P., of Penrhyn, near Bangor, who was afterwards created an Irish peer under the title of Baron Penrhyn. Lady Penrhyn was well known in Liverpool as an active electioneering agent, and died June 1st, 1816.

In the "Records of the Mock Corporation of Sephton" is the following entry: "Mr. Andrew Fillan (an ancient burgess), on the motion of Burgess Cobham, seconded by the Recorder, was unanimously admitted physician to the corporation, on which occasion he took the oath of office in such a manner as convinced the company present that he was fonder of the contents of the mace than any draught in the whole Materia Medica." Drinking on the mace was one of the customs connected with the admission of members. The aspiring candidate had to take "the oath" and then drain the mace, if possible, at a breath, at a wind, or at one "tip"—i.e., of the mace—as the records express it. Nearly every member of the "corporation" bore some whimsical title, often borrowed from the business or profession to which he belonged. Sometimes it was far from flattering. Out of more than 300 members constituting this Mock Corporation nearly 200 appear in Gore's Directory of 1791 as Liverpool gentlemen, merchants, and tradesmen. In 1787 a Mr. Zuill was sworn in physician to the corporation, and Mr. Moss of Liverpool, surgeon, having "refused the Honor of becoming a Member, and therefore be is deem'd disqualified from ever being a Member." Mr. Beckett was "druggist to the Corporation and apothecary, &c.," in 1788. On Sunday, Jan. 25th, 1789, Mr. James Brown of Liverpool, surgeon, dined with the "corporation" as a visitor. After dinner "the Recorder begged leave to recommend Mr. James Brown as a fit and proper person to be admitted to the Franchise of Burgess of this antient and Loyal Corporation, and the motion being Seconded by the Worshipful the Mayor, it was carried unanimously in the affirmative. Mr. Brown was accordingly admitted, took the usual oath, and drank his ale like a man." This was very different to the conduct of a Mr. Bevan, elected rather unwillingly to the position of "Groom of the Stole to the Corporation," who was "sworn in and drank his oath in ale, which he, however, did not do with such *gout* as it was at first imagined so honourable a Burgess recommended to so honourable a Dignity would have done; for Oh, strange to tell! he made Three pauses at Swigging one pitiful pint of ale."

At Bootle on Sunday, March 15th, 1789, several members of the corporation dined together, and were afterwards visited by Henry Stanistreet, M.D., and other gentlemen. Dr. Stanistreet and a Mr. James Bevan of Ashton were admitted "to the Franchise of Free Burgess, took the usual oath, and drunk their Liquor like men. N.B.—The former smiled and made 2 bites of a cherry; the Latter drank his ale gallantly indeed." Mr. James Bevan was proposed by Burgess Taylor, and seconded by the Mayor, to the office of Rough Rider to the corporation. This was carried *nem. con.* Dr. Stanistreet was proposed by Burgess George Bevan and seconded by Alderman Whaley to the office of physician; this was carried *nem. con.* In the following May Mr. John Zuill, junior, was admitted and took the usual oath, "which he drank in such stile as clearly evinced he was a chip of the Old Block." The name of Dr. Rutter also occurs among the members of the corporation. The corporation ordained "that a Common Hall be annually holden on every ffeast of Saint Luke and 1st day of April, and the reason why the Common Halls are proposed to be holden on these days are, with regard to the first, because Saint Luke was a very learned physician and well skilled in ye cure of lunatics, and with regard to the last, because on the 1st of April many Artificial Patients of that description are not infrequently exhibited." At Sefton, on Sunday, Sept. 19th, 1790, Dr. Fillan was proposed and duly admitted, taking the oath and drinking his ale "cheerfully." Among the titles of the office bearers in this very convivial corporation we find the following: Overseer of Bastard Children, Punch Maker, Brazier and Tinker General, Master of the Revels, Window Peeper, Hooper, Cooper and Powder Keg Maker, Chafe-Wax, Poet Laureate, Commissioner to the Hackney Coaches, African Committee-man, Attorney General, &c. At a Sunday meeting at Bootle it is recorded of them that "they dined like men of Gath and proved the strength of the human appetite *ad maximum*, and concluded their repast with a bottle of good old Sherry from the Vaults of Alderman Newsham, the Corporation Vintner." On Sunday, July 26th, 1789, fifteen of the members met at Sefton, where they had "excellent Westphalia ham & best London particular Madeira on the occasion in the Council Chamber." They occasionally drank port wine 130 years old. After careful examination of the printed records we find that, with the exception of the instances mentioned above, the relations of the medical men of Liverpool to the mock corporation were purely professional, or, in other words, it is highly probable that the excesses of the members made work for the medical men. Even the medical men whose names appear in the records as admitted members do not appear to have subsequently taken a conspicuous part in the meetings or been regular in their attendance. Notwithstanding their roystering and vagaries, it must be borne in mind that the members of the mock corporation were men of great influence in Liverpool.

In Union-street resided in the middle of the eighteenth century Dr. Samuel Angier, an eminent physician. He married Catherine, daughter of George Leigh of Oughtrington, and was connected with the old Liverpool family of Clayton. In a commodious house at the corner of St. Paul's-square and Virginia-street, about the year 1770, lived Dr. Henry Richmond. This physician was the father of the Rev. Legh Richmond, rector of Turvey, Bedfordshire, the distinguished author of "The Dairyman's Daughter." Dr. Richmond's father was one of the rectors of Liverpool. Mr. Matthew Turner, surgeon, of John-street, was an excellent chemist. He re-discovered the lost art of staining glass, and in conjunction with a clever artist of the name of Chubbard executed the south window of St. Anne's Church, Liverpool. Mr. Turner was also a wit, and was the cause of a good deal of merriment in advising His Majesty King George III. not to fret at the loss of his American colonies, for Herschel had made amends by discovering a world *in nubibus*, alluding, of course, to the planet Georgium Sidus. Mr. Turner was a member of the first society, formed in 1769, for the establishment of an academy of painting and sculpture in Liverpool, as was also Dr. Matthew Dobson. After a few months' trial the scheme was abandoned, but was revived in 1773. Courses of lectures were delivered, including lectures on anatomy by Mr. Turner and on chemistry by Dr. Renwick. The time, however, was unpropitious, and the society, which numbered William Roscoe among its promoters, was dissolved. Mr. Turner early in his professional career proposed the establishment of a lying-in hospital in Liverpool, as will be seen from the following advertisement, which appeared in the *Liverpool Chronicle and Marine Gazetteer* for May 6th, 1757. This was eighty-four years prior to the founding of the Institution for Married Lying-in Women in 1841, and forty years in advance of the Ladies' Charity, established in 1796.

"A lying-in hospital in this town being what many charitably disposed persons have desired and thought very necessary, and as such a design, if put into execution, must require a considerable time before it can be compleated, the following Proposal is made as an attempt to relieve the most pitiable part of the lying-in poor in the meantime.

"As many unfortunate poor women and their infants suffer greatly through the insufficiency of their Midwives in Difficult Cases; and as the expense of calling in a Man-Midwife at such times often prevents the indigent from having proper Assistance; and as there is a proper place of reception for all other sick poor already provided in town, free of charges, but none for this particular purpose, which deserves at least equal consideration; and as almost every person is engaged at this juncture in contributing, each according to his particular talent, towards relieving the distresses of the poor, —I judged my endeavours for this end might not be unacceptable; I do therefore hereby inform the public that I am ready to attend and assist to the best of my power Gratis, all such married women, living within the limits of this town, whose Cases in labour are Difficult or Dangerous, so that the midwife is at a loss, or unable alone to perform her Office, provided they are not able to pay.

"But, considering that some persons may, from the tenor of this Advertisement, insinuate that the design may not proceed from any motive of Compassion, but only for my own Improvement, to try experiments, or to practise upon the above-mentioned objects of pity, it may not be amiss to obviate these objections (as I have practised but a short time in this town) by further observing to the public that

I have studied and practised Midwifry in two of the Chief Schools for that Art in Europe; of the truth of which any person may be satisfied, by only calling at my house, where they may see it certified under the hands of Doctor Smellie, teacher of Midwifry in London, and of Mons. Levret, Censor of the Academy of Surgery, and Professor of Midwifry in Paris. "M. TURNER.

"Atherton-street, Liverpool, May 2, 1757.

"N.B.—'Tis hoped that the Gentlewomen who practise Midwifry in town will not look upon anything here mention'd as designed to prejudice or undervalue them, the design being only to give them assistance when 'tis wanted, which I judge may be offered to them in the manner here proposed, without any Impeachment of their abilities, by those who may be allowed to have had better opportunities of acquiring skill in the profession than the Practitioners of their sex usually have."

Mr. Turner may have found "the Gentlewomen who practised Midwifry in town" too many for him in this benevolent project, for I cannot trace any further record of his labour in this direction. In the guarded phraseology of his footnote he appears prophetically to anticipate the delicate relationship of the "gentlewomen" in question towards the medical profession, as unpleasantly emphasised not long ago in the case of the Liverpool Lying-in Hospital.

The year 1745 is memorable in the annals of Liverpool, not only for the attachment of the inhabitants to the House of Hanover, but for the commencement of a great public charity which still flourishes. Several addresses had been published in the town from time to time previously to the year 1745 recommending the forming of a public infirmary. These induced the clergy, physicians, surgeons, merchants, and tradesmen, with some neighbouring gentlemen, to open a subscription for erecting a new building in the year 1745 upon a field, the site of the present St. George's Hall, given by the corporation for a term of 999 years. In July the work was begun and carried on with great vigour, but owing to the rebellion of 1745 the house was not finished till the latter end of 1748. Then the two upper wards were furnished with thirty beds, "which was judged nearly equivalent to the yearly subscription for the support of that number of persons." On March 25th, 1749, the house was opened for the admission of patients. The officers for the first year were the Right Honourable Edward Earl of Derby, President; Mr. Foster Cunliffe, treasurer; Mr. Chas. Goore and Mr. Edward Deane, deputy-treasurers; Mr. Samuel Ogden and Mr. Thomas Seel, auditors; Dr. Walter Greene, Dr. John Kenyon, and Dr. Thomas Robinson, physicians; Mr. James Bromfield, Mr. Thomas Antrobus, and Mr. William Pickering, surgeons; and the Rev. Matthew Lowe, chaplain. The subscriptions to the building fund amounted to £1809 13*s.* 5*d.* in Liverpool, and to £438 13*s.* 6*d.* in the country, making a total of £2248 6*s.* 11*d.* The yearly subscription list amounted to £486 14*s.* 6*d.* The cost of building the infirmary was £2648 7*s.* 11*d.*, of which sum about £400 was borrowed. The number of in-patients admitted in 1749 was 122, and out-patients 72. In glancing over the list of subscribers to the building and founding of the infirmary, which includes the names of the principal inhabitants of Liverpool in the year 1745, it is interesting to note the amount of support rendered to the good cause by the profession itself: Alderman John Bromfield, surgeon, subscribed £32 6*s.*; George Dickins, M.D., £5 5*s.*; Richard Gerard, apothecary, £21; Edward Livesey, surgeon, £10 10*s.*; and Samuel Nicholson, M.D., £5 5*s.* These subscribers and the physicians and surgeons of the charity make in all eight gentlemen practising in Liverpool in the year of the rebellion. Yet there must have been one more, for we know that in that very year of trouble there was born in Water-street a "man child" destined to be one of Liverpool's most distinguished surgeons, and to perform in the institution then being founded a triumphant operation in conservative surgery. We mean Henry Parke, whose father also was a surgeon, but whose name does not appear in the list from which we have quoted.

In Gore's Directory for 1781 the names of the following were given as "medical gentlemen who attend gratis" at the infirmary:—Physicians: Dr. Thomas Houlston, Dr. Joseph Brandreth, and Dr. Joseph Camplin. Surgeons: Dr. John Lyon, Mr. Henry Parke, and Mr. Edward Alanson. It is interesting to note that the gardens for the use of the convalescents extended to where are now the steps leading to the esplanade in front of St. George's Hall. Mr. F. W. Lowndes, in his pamphlet on Venereal Diseases and Prostitution in Liverpool, states that the late Mr. Minshull, surgeon, remembered the old infirmary and that cases of venereal disease were treated there. The wings of the old infirmary were occupied as the Seamen's Hospitals. They were receptacles for decayed seamen and their wives. The seamen sailing from Liverpool contributed sixpence per month by Act of Parliament for their support. They were erected in 1752. The lunatic asylum and infirmary on being closed were used as barracks. The lunatic asylum stood at the corner of St. John's Cemetery, where all sorts of people were interred, those who had "gone to their death" by mischance or committed suicide or died in prison. In 1806 a huge pit was dug in the cemetery, and covered by folding doors or flags. The dead were deposited in the pit, and the earth was thrown upon each layer of coffins as it was completed. In 1816 a writer in the *Mercury* complained of the frightful stench arising from the public grave in the Parish Cemetery, and suggested that a similar contrivance to that used in St. John's-yard should be constructed to cover it. In 1804 some limekilns which stood in Lime-street on the side of the railway station, near Lord Nelson-street, were suppressed, the proprietors being indicted for a nuisance by the authorities, the physicians attending the infirmary giving evidence of the injurious effects of the azotic gas on their patients suffering from pulmonary complaints. The house at the upper corner of Newington-street and Bold-street, now converted into shops, was erected in 1788 by Henry Parke, commonly called Harry Parke, surgeon, who resided there for thirty-two years. He was descended from an old Liverpool family. His father was a surgeon residing in Water-street, where Henry was born on March 2nd, 1745. He commenced practice in 1766 in Basnett-street. This was then considered such a distance from the centre of the town that his friends remonstrated with him for going so far out of the way of his patients. In 1788 he removed to Bold-street, and in 1820 he retired to a suburban retreat at Wavertree, and died on Jan. 28th, 1831, in the eighty-sixth year of his age, full of years and honours. Mr. Parke was not the least eminent of the many distinguished men who have raised the fame of the medical and surgical school of Liverpool. During a long professional life he did much to increase the reputation of the practice of surgery in his native town. His work on the "Excision of Carious Joints" passed through several editions. The following tribute to his merits appeared in an article on Surgical Science in the *Edinburgh Review*, October, 1872: "In the latter portion of the last century, when a vigorous flash of originality seemed to light up the annals of surgery, Parke, of the Liverpool Hospital, may be said to have accomplished the first act of conservative surgery. The fact of his patient being a sailor, to whom the loss of a foot and leg would have been tantamount to the loss of his means of getting bread, determined him to make the experiment of simply excising the diseased part, the knee-joint, and retaining the foot and leg. This he did so successfully that, to use his own words, the patient several years after the operation 'made several voyages to sea, in which he was able to go aloft with considerable agility, and to perform all the duties of a seaman, that he was twice shipwrecked, and suffered great hardship without feeling any further complaint in that limb.' This was a crucial test of success that should have stamped the operation as one of the greatest surgical triumphs of the time, but, like so many other great strides taken in that age of extreme vivification, it was in advance of its fellows and was destined to be arrested for the better part of another half-century." The name of Harry Parke is professionally connected with two celebrated duels which took place in Liverpool. One was the affair between Major Brooks and Colonel Bolton. The parties had been arrested and bound over to keep the peace on one occasion, and before the year elapsed the Major publicly insulted Colonel Bolton in open day in Castle-street, a challenge from Colonel Bolton being the result. The twelve months' bond expired on Dec. 20th, 1805, and on the evening of that day the meeting took place in a field near Fairclough-lane, then a quiet rural road leading from the top of Pembroke-place to Low-hill. The spot must have been very near the site of St. Jude's Church. Major Brooks was accompanied by Mr. Forbes, and Colonel Bolton had Mr. Harris for his second. Mr. Parke was taken up by Colonel Bolton in his carriage as he passed his door. When they arrived on the ground it was so dark that they could not see to load the pistols. Candles were therefore procured; and here in the dreary, cold December night the tragedy proceeded to its *dénouement*. What a scene for the pencil of a Salvator

Rosa! The generous, public-spirited, kind-hearted British merchant, Colonel Bolton, who was actually the benefactor of the man who had insulted him, compelled by the "code of honour" of the day to imperil his life because the person whom he had fostered and cherished chose to treat him with base ingratitude. Nemesis, however, claimed her victim. The Major fired first without harming the Colonel, who returned the shot, hitting his opponent in the eye and killing him on the spot. The fatal report might have been heard at the Major's house, which stood at the corner of Daulby-street, not more than 200 yards distant. At the coroner's inquest a verdict of "wilful murder" was found; but no prosecution was ever instituted, public opinion being entirely in favour of Colonel Bolton. The other affair was of an earlier date. Lieutenant Sparling, of the 10th Regiment of Dragoons, was paying his addresses to Miss Anne Renshaw, daughter of Rector Renshaw, who resided in Bold-street. An anonymous letter was sent him reflecting on the character of the young lady's family. Although he stated on his trial that he discredited the greater part of the statements, yet enough remained to induce him to withdraw from his engagement, which he did by a letter to Mr. Renshaw. This led to a very bitter correspondence between the parties, and Lieutenant Sparling went abroad for some months. Whilst he was away rumour and gossip, of course, were rife. Mr. Grayson, the young lady's uncle, felt the insult very warmly. He was an entire stranger to Lieutenant Sparling, but did not hesitate to publicly brand him as a scoundrel and a villain, which ultimately led to a challenge from Sparling. The parties met about seven on Sunday morning, Feb. 26th, 1804, opposite the Old Chapel in Toxteth Park, and thence proceeded down the retired valley of the Dingle. Lieutenant Sparling's second was Captain Colquitt, R.N. (Glorious Sam, as he has been called), of the frigate *Princess;* Mr. Grayson's Dr. Macartney, a physician of eminence in the town. Harry Parke was also in attendance, but stated on the trial that he did not know for what purpose he was taken to the ground. At the first fire Grayson fell mortally wounded. Lieutenant Sparling and Colquitt were tried at Lancaster Assizes before Sir Alan Chambre, the result being an acquittal for both.

In the month of February, 1798, the people of Liverpool voluntarily subscribed £17,000 to enable the Government to meet the enormous expenses of the war. Among the subscribers were Henry Parke, who put down £100, James Gerard (probably the medical man), £50, and Dr. Worthington, £50.

BUBONIC PLAGUE IN BOMBAY.

THE Secretary of State for India has received the usual weekly telegram from the Governor of Bombay. It embraces the week ending March 19th. Summarily stated, it reports that the number of deaths from plague returned in that city amounted to 488; that less opposition was shown on the part of the natives in Poona and Karachi to the application of measures of prevention and disinfection; and that large numbers of people (3296) were being inoculated with Haffkine's lymph. The deaths from plague in Karachi during the week were 202. The disease has established itself at Haidarabad and Sukkur, and there are suspected cases at Shikarpur. The preventive measures generally adopted are essentially those which are enforced at Karachi. Inoculations for plague have begun in the last named place, and in Phana, Surat, Ahmedabad, and Poona. Great opposition is manifested at Bombay, in the native town, to the segregation of plague cases, and some rioting has taken place; and a strong deputation has also protested on the part of the Mohammedans against the enforcement of segregation orders. There cannot be any doubt, however, that the prompt segregation of infected cases is a most essential and urgent measure in dealing with the disease, and it is to be much regretted that it was not adopted at the earliest stage of the epidemic, when there would have been some chance of stamping out the outbreak whilst it was still circumscribed within very narrow limits. And this brings us to a matter about which strong opinions are held in Bombay—viz., as to the want of administrative management and organisation shown by the authorities at the beginning of the epidemic and to the extremely weak and ineffective way in which the municipal body in particular dealt with the matter. It was from no want of warning and early and accurate information as to the nature of the disease and the best and only way that it could be encountered. They had a medical committee to advise them, and the benefit of the best advice on the part of officers of the Indian Medical Service and other members of the medical profession to guide them. As it was the preventive measures that were recommended at an early stage of the disease, but not acted upon, had all to be adopted at a much later date when the plague had succeeded in getting a firm foothold in the city and created a panic, with the consequent exodus and risk of its spread to other places. Opposition arising from ignorance and caste prejudice was to be expected, and had in any case to be encountered sooner or later; but it made all the difference if it were encountered sooner rather than later. What is the line of action that has to be taken in all epidemic disease? It is twofold. To seek by hygienic measures to render a population as far as practicable immune in case of invasion of disease and to isolate at once those cases in which the disease declares itself. Of course, these principles of action are not always easily realised; but if we may judge from all we hear and read of local and municipal government in Indian cities, it is most feeble and ineffective and altogether unfitted for dealing with matters of this kind. Action requires to be based upon experience and clearly reasoned out principles, and adopted with more reasonable promptitude than was the case in India. Several excellent communications and articles have appeared from time to time in reference to this matter in the *Times of India*. Segregation, disinfection of vacated houses, measures for thinning an overcrowded population, the destruction by fire of miserably insanitary dwellings, and the creation of air spaces, wholesale cleansing, house-to-house visitation wholesale cleansing—all these things had to be adopted in the end. It is only right to add that these measures were, we understand, represented by the local medical authorities long before they were carried out. It may be urged that it is no good reverting to them now, but what happened in Bombay in regard to this epidemic is what has so often happened before, and probably will again, for people will have it so. We quite appreciate, however, the great difficulties and responsibilities of such a situation, especially in the case of a big Indian city with its different races, religions, and castes, and we gladly recognise that the Bombay Government when it grappled with the situation in earnest did all that it possibly could. The epidemic has been the cause of a large loss of life, and Europeans have not by any means been altogether spared; it has paralysed for a time the trade and caused a large financial loss, but it has not been without its compensations in that it has awakened the attention of all to the importance of public hygiene and given rise, let us hope, to the introduction of many salutary changes in other cities than Bombay.

The medical profession and the public will have learnt with regret that Professor Hankin is stated to have contracted the disease, but the attack proved to be a mild one, and he is fast recovering, if he be not already quite well.

We recommend to the notice of our readers an article from the pen of a particularly well-informed local correspondent on the sanitary condition of Bombay. It is printed on page 915 of this issue.

M. HAFFKINE AND HIS ANTITOXIN TREATMENT OF PLAGUE.

It is stated in the *Pioneer Mail* of the 4th inst. that M. Haffkine is now ready to administer his antitoxin, which has been under preparation at Sewree, in cases of plague of recent occurrence which may be reported to him by medical men in a position to ascertain that the patient has shown symptoms within a definite period not exceeding forty-eight hours. The antitoxin has been tested in very advanced cases at the Arthur-road Hospital and elsewhere, and also in a series of cases which permitted comparison between patients in a dangerous state subjected to antitoxin treatment with others of the same group in milder attacks and left to ordinary treatment, and the attempt, though not successful in every case, gave results undoubtedly favourable to the treatment.

PASTEUR MEMORIAL LECTURE.

A SPECIAL meeting of the Chemical Society was held on Thursday evening, March 25th, when Professor Percy Frankland, F.R.S., delivered the Pasteur Memorial Lecture.

Professor Percy Frankland commenced his discourse by pointing out how the consideration of Pasteur's work was a subject specially befitting the Chemical Society, inasmuch as he owed the training which enabled him to master so many and such various problems to the rigorous discipline in early years which he underwent in the pursuit of chemistry. His first laurels were won in chemical science, and the epoch-making discoveries which he made as a student and assistant at the famous Ecole Normale have stimulated researches in, and practically founded, that fascinating and important branch of investigation known as stereo-chemistry. Perhaps the most conclusive and eloquent testimony which we can have to the profound importance of Pasteur's researches in this direction is the tribute paid to them by his greatest follower, Emil Fischer, who acknowledged that, despite the immense amount of work which has since been carried out, "there is hardly a new fact of fundamental importance which has been added to his discoveries."

Removed to Lille, Pasteur entered upon those fermentation studies which he followed with such brilliant success over a period of twenty years. In this field of enquiry he had his first passage of arms with the great Liebig; it is needless to say that Pasteur emerged victorious, and the vital has replaced that chemical theory of fermentation processes which was advanced so eloquently by Liebig and other leading men of science of the day. The story of the famous spontaneous generation controversy was told, and it was pointed out how Pasteur was unconsciously preparing himself for the great work with which his name will always be associated—the inauguration of the modern system of preventive medicine. Already in his researches on diseases in silkworms he was attracted by the study of contagion, and the valuable experience he gained in this work may be gathered from the fact that in later years, when anyone presented himself and begged the privilege of working in his laboratory, he used to ask them if they had read his volume on silkworm diseases, and tell them that that was the best preparation they could have for the work which they would be likely to have to undertake. But besides Pasteur's growing interest in the bacteriological elucidation of diseases he was led to embark upon it himself from a growing conviction that the hands into which it had mainly fallen were more likely to damage than benefit the good cause, and Professor Frankland then went on to relate how Pasteur threw himself at the ripe age of fifty-five years with all the enthusiasm of youth into the subject of disease and its prevention, commencing with the study of anthrax. But even while carrying on elaborate experiments on this disease he was turning in all directions for material to extend his researches on pathological phenomena. He walked the hospitals armed with sterile vessels to collect morbid products, he cultivated the staphylococcus pyogenes from boils on the person of one of his assistants, he visited the Maternity Hospital and discovered the streptococcus pyogenes, asserting it to be the cause of puerperal fever. In this connexion an amusing incident was related by the lecturer, who described how Pasteur entered during a lively discussion which was being carried on at the Academy of Medicine as to the origin of puerperal fever, and after listening for some time, unable to restrain himself any longer, he rose and told the medical men present that what caused the disease was nothing to do with what they had been saying, that, on the contrary, it was the medical man himself who carried the microbe of the disease from one patient to another, and when the speaker replied that he was afraid they would never discover that microbe, Pasteur rushed to the blackboard and drew the streptococcus, saying, "Tenez, voici sa figure." The stupefaction and surprise of his audience is more easily imagined than described.

From the etiology of diseases such as anthrax, fowl cholera, swine fever, Pasteur passed on to the consideration of the means whereby they could be combated. The great achievement of Jenner—an achievement which, Professor Frankland reminded his audience, Herbert Spencer had pointed out was rewarded by a grateful country in the shape of a begrimed statue hidden away in an obscure corner of the Kensington-gardens frequented chiefly by nursemaids and perambulators,—had long been dwelt upon by Pasteur, and he cherished the ambition of securing an immunity for those diseases for which the nature of the viruses had now been made known similar to that which Jenner had secured in the case of small-pox. How he came upon his first "vaccine"—viz., that of fowl cholera—through his cultures of the microbe of this disease having suffered such degeneration during a vacation that they were found incapable of infecting fowls, and how Pasteur, who never neglected any fact, was led to re-inoculate the fowls which had resisted the infection with these weakened cultures to see if they could take the disease, and thus discovered to his intense satisfaction that they had been rendered immune, Professor Frankland described in detail. The magnificent triumph which followed the discovery of a "vaccine" for anthrax and other diseases was, however, if possible, eclipsed by the production of a cure for rabies.

The public expression of gratitude for this great discovery took the form of a public subscription, which rendered possible the foundation of the now famous Institut Pasteur. The creation of such an institute had long been cherished as a dream by its first director and great master, and its realisation was the delight of the few remaining years of his life; and here, under the auspices of Duclaux, Roux, Chamberland, and Metchnikoff, the sacred fire kindled by *le grand maître* is still burning, and long (concluded Professor Frankland) may this flame be fed within the temple where rests that hero of science whose great ambition was to be able in his last hour to pronounce the words, so simple in their form, so boundless in their aspiration, "*J'ai fait ce que j'ai pu.*"

THE APOTHECARIES' HALL OF IRELAND AND THE GENERAL MEDICAL COUNCIL.

ON Monday, Feb. 22nd, a Committee of the Privy Council, consisting of the Duke of Devonshire, Lord Rathmore, Lord Macnaghten, and Lord James of Hereford, heard the appeal of the Apothecaries' Hall of Ireland against the decision of the General Medical Council in refusing to appoint examiners to assist in the qualifying examinations held by the Hall.

Mr. Haldane, Q.C., and Mr. B. Stephen Foster appeared for the Apothecaries' Hall, and Sir Robert Reid, Q.C., M.P., and Mr. Muir Mackenzie appeared for the General Medical Council.

For the appellants it was urged that the decision of the General Medical Council would, unless over-ruled by the Privy Council, practically put an end to the existence of the Apothecaries' Hall.

Previously to 1886 the Apothecaries' Hall had the power of examining and registering candidates under the Medical Act. The Act of 1886 gave the General Medical Council power to see that a sufficient standard of efficiency was maintained at any qualifying examination. The General Medical Council had reported that they were dissatisfied with a certain part of the examination held by the Apothecaries' Hall on several occasions and refused to appoint examiners, which was also a part of the powers conferred upon the General Medical Council by the Act of 1886.

After considerable discussion, the Duke of Devonshire intimated that the decision of the Committee would be communicated to the parties in due course.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6381 births and 3936 deaths were registered during the week ending March 20th. The annual rate of mortality in these towns, which had been 18·1 and 18·6 per 1000 in the two preceding weeks, further rose last week to 18·7. In London the rate was 17·9 per 1000, while it averaged 19·2 in the thirty-two provincial towns. The lowest rates in these towns were 9·6 in Derby, 12·0 in Croydon, 12·3 in Norwich, and 12·9 in Brighton; the highest rates were 23·4 in Manchester, 24·5 in Wolverhampton, 25·4 in Preston, and 26·9 in Salford. The 3936 deaths included 344 which were referred to the principal zymotic diseases, against 331 and 334 in the two preceding weeks; of these,

113 resulted from whooping-cough, 87 from measles, 61 from diphtheria, 32 from diarrhœa, 28 from scarlet fever, and 23 from "fever" (principally enteric). No death from any of these diseases was recorded last week either in Wolverhampton or in Leicester; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Oldham, and the highest rates in Blackburn, Cardiff, Bolton, and Salford. The greatest mortality from measles occurred in Manchester, Cardiff, Gateshead, Bolton, and Salford; and from whooping-cough in Salford, Bristol, Swansea, Burnley, and Blackburn. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 61 deaths from diphtheria included 37 in London, 4 in Birmingham, 4 in Liverpool, 3 in Huddersfield, and 3 in West Ham. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns. There were 29 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, March 20th, against 43 and 30 at the end of the two preceding weeks; 2 new cases were admitted during the week, against 18, 6, and 0 in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2622, against 2817, 2745, and 2685 on the three preceding Saturdays; 206 new cases were admitted during the week, against 237, 211, and 218 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 307 and 344 in the two preceding weeks, declined again to 317 last week, and were 206 below the corrected average. The causes of 56 or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Leeds, Hull, and in sixteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the five preceding weeks from 28·8 to 23·1 per 1000, rose again to 23·3 during the week ending March 20th, and exceeded by 4·6 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·0 in Leith and 20·6 in Edinburgh to 24·5 in Paisley, and 32·4 in Perth. The 693 deaths in these towns included 33 which were referred to measles, 33 to whooping-cough, 15 to diarrhœa, 11 to "fever" (principally enteric), 9 to scarlet fever, and 5 to diphtheria. In all, 106 deaths resulted from these principal zymotic diseases, against 96 and 83 in the two preceding weeks. These 106 deaths were equal to an annual rate of 3·6 per 1000, which was 2·0 per 1000 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 30 and 27 in the two preceding weeks, rose again to 33 last week, and included 21 in Glasgow and 12 in Edinburgh. The deaths from whooping-cough, which had been 36 and 29 in the two preceding weeks, rose to 33 last week, of which 24 occurred in Glasgow, 5 in Edinburgh, and 3 in Perth. The 11 deaths referred to different forms of "fever" considerably exceeded the number recorded in any recent week, and included 8 in Glasgow. The fatal cases of scarlet fever, which had been 5 in each of the two preceding weeks, rose to 9 last week, of which 2 occurred in Glasgow, 2 in Edinburgh, and 2 in Aberdeen. Of the 5 deaths from diphtheria 3 were registered in Glasgow and 2 in Dundee. The deaths referred to diseases of the respiratory organs in these towns, which had been 203 and 152 in the two preceding weeks, were 155 last week, and exceeded by 39 the number in the corresponding period of last year. The causes of 38, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 45·2 and 39·1 per 1000 in the two preceding weeks, rose again to 40·4 during the week ending March 20th. During the past eleven weeks of the current quarter the death-rate in the city has averaged 40·7 per 1000, the rate during the same period being 18·6 in London and 22·3 in Edinburgh. The 271 deaths registered in Dublin during the week under notice exceeded by 9 the number in the preceding week, and included 74 which were referred to the principal zymotic diseases, against 59 and 61 in the two preceding weeks; of these, 46 resulted from measles, 20 from whooping-cough, 4 from diarrhœa, 2 from scarlet fever, 2 from "fever," and not one either from small-pox or diphtheria. These 74 deaths were equal to an annual rate of 11·0 per 1000, the zymotic death-rate during the same period being 1·5 in London and 3·6 in Edinburgh. The fatal cases of measles, which had been 44 and 43 in the two preceding weeks, rose again to 46 last week. The deaths referred to whooping-cough, which had been 21 and 9 in the two preceding weeks, rose again to 20 last week. The two fatal cases of scarlet fever corresponded with the number recorded in the preceding week. The 271 deaths registered in Dublin last week included 55 of infants under one year of age, and 49 of persons aged upwards of sixty years; the deaths of infants showed an increase, while those of elderly persons were below those recorded in the preceding week. Seven inquest cases and 6 deaths from violence were registered; and 65, or nearly a fourth, of the deaths occurred in public institutions. The causes of 16, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

BRIGADE-SURGEON-LIEUTENANT-COLONEL R. EXHAM, Surgeon-Majors E. North, J. M. Jones, and H. L. Battersby, Surgeon-Captains C. W. Reilly, T. Birt, and H. E. Winter have arrived home from India in the transport *Victoria*.

Surgeon-Major J. J. C. Donnett has been appointed Special Sanitary Inspecting Officer, Poona Cantonment. Surgeon-Major N. G. Macpherson has been appointed to the Army Medical Department at the War Office. Surgeon-Major Tidbury has been transferred from Cork to Portsmouth.

Surgeon-Captain George M. Dobson, M.B., to be Surgeon-Major.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain J. J. Bourke and Surgeon-Lieutenant F. A. L. Hammond, whose services have been placed at the disposal of the Chief Commissioner, are appointed Inspecting Medical Officers under the rules made under the Epidemic Diseases Act, 1897, and are posted to the stations of Itarsi and Nagpur respectively. Surgeon-Lieutenant H. St. J. Fraser, whose services have been placed at the disposal of the Chief Commissioner, is posted to Hoshangabad for employment on famine duty. Surgeon-Lieutenant C. M. Mathew, whose services have been placed at the disposal of the Chief Commissioner, is posted to Raipur for employment on famine duty.

To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel George Bainbridge, M.D., Bombay Establishment (dated Oct. 4th, 1896). To be Brigade-Surgeon-Lieutenant-Colonel: Surgeon Lieutenant-Colonel Charles Henry Joubert, Bengal Establishment (dated Sept. 1st, 1896). To be Surgeon-Lieutenant-Colonel: Surgeon-Major Charles Henry Beatson, Bengal Establishment (dated Sept. 30th, 1896). Surgeon-Lieutenants to be Surgeon-Captains (dated Jan. 29th, 1897)—*Bengal Establishment*: George Lamb, Henry Burden, John Fisher, Edward Surman Peck, Charles Harford Evans, Stanley Arthur Harris, Ewan Cameron MacLeod, and Charles Thomson. *Madras Establishment*: Alfred Eugene Berry and Herbert St. John Fraser. *Bombay Establishment*: Bernard Henry Frederick Leumann and Hugh Bennett.—*London Gazette*.

NAVAL MEDICAL SERVICE.

The following appointments are notified:—Staff Surgeons: A. G. P. Gibbs to the *Victory*, for the *Malacca*; W. G. K. Barnes to the *Undaunted*; J. J. Dinnis to the *Edgar*; and J. Sogrue to the *Australia*. Surgeons: C. H. Rock to the *Undaunted*; D. J. P. McNabb to the *Edgar*; E. G. E. O'Leary to the *Research*; John Grant to the *Pembroke*, and afterwards to the *Pelorus*; Sidney T. Reid to the *Hibernia*; and John W. Slaughter to the *Victory*, for the *Malacca*, on the voyage home.

HONOURABLE ARTILLERY COMPANY OF LONDON.

The under-mentioned officer resigns his commission:—Surgeon-Captain H. G. Read (dated March 24th, 1897).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain H. W. Roberts to be Surgeon-Major.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant J. T. Simpson to be Surgeon-Captain on increase of establishment.

VOLUNTEER CORPS.

Artillery: 2nd Kent: Surgeon-Major F. Smith, M.D., to be Surgeon-Lieutenant-Colonel. 1st Dorsetshire (Southern Division, Royal Artillery): Surgeon-Lieutenant Hubert Houssemayne Du Boulay resigns his commission, and is appointed Lieutenant. 1st West Riding of Yorkshire (Western Division, Royal Artillery): Surgeon-Captain John Nightingale resigns his commission, and is appointed Second Lieutenant. *Rifle:* 3rd Volunteer Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Lieutenant C. Boyd to be Surgeon-Captain. 5th Volunteer Battalion the Cheshire Regiment: Surgeon-Major W. R. Dambrill-Davies to be Surgeon-Lieutenant-Colonel. 14th Middlesex (Inns of Court): Surgeon-Lieutenant C. J. Arkle, M.D., to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Captain J. E. Squire, M.D., to be Surgeon-Major on increase of establishment. Surgeon-Lieutenant H. D. Buss to be Surgeon-Captain.

THE HEALTH OF THE FRENCH ARMY IN 1896.

The medico-statistical report issued annually by the French War Minister has made its appearance, as usual, in the *Journal Officiel*, and, generally speaking, its contents may be said to show that the advance of the army towards sanitary perfection, which of late years has been very conspicuous, was adequately maintained during the past twelvemonth. In 1887, ten years ago, the total number of men with the colours was 480,672, and among them 3319 deaths took place, equal to 6·9 per 1000; but in 1896, although the average strength had risen to 546,500, the deaths only numbered 2900, or 5·3 per 1000. This happy result is chiefly due to the measures that have been adopted for purifying the water-supply. Formerly many garrisons—notably those at Lure, Évreux, and Châteaudun—used to be well-nigh decimated by constantly recurring outbreaks of typhoid fever, but now they enjoy what the Minister describes as "absolute salubrity." The evidence thus afforded being conclusive, it has been decided to acquire six more sterilising apparatuses in order that they may be permanently installed wherever the drinking water is open to suspicion. According to this system of purification the water is rendered sterile by means of steam at high pressure, and the appliances are said to be at once simple in construction, durable, economical, and easily worked. Whilst thus eulogising the latest device for combating water-borne disease, General Billot by no means seeks to minimise the "incontestable advantages" of the Pasteur Chamberland filter. The efficacy of the latter admirable invention was placed beyond doubt by the unanimous chorus of approval from every garrison, large or small, where it was used; but the sanitary authorities nevertheless felt bound to take advantage of the new system which, after several years of experiment under their own close supervision, had gradually been brought to perfection. Turning from the prevention of disease to its incidence, the Minister is able to announce the steady decrease of small-pox amongst the troops. In 1876–77–78 the number of cases exceeded 1000 annually, and the deaths to be deplored were respectively 127, 92, and 98. In 1895 there were only 61 cases of small-pox in the whole army, with 6 deaths; while last year of 57 cases only 2 proved fatal. It is owing to re-vaccination that the soldiers were safeguarded while on service in Africa, Madagascar, and Tonkin, surrounded as they were by a native population, amongst whom the scourge is both endemic and deadly. As regards "croup," the fatal cases have been reduced by more than a half. All military hospitals, as well as every military centre, no matter how small, in France and Algeria is now daily furnished with the special instruments and appliances required for anti-diphtheritic inoculation, the serum being supplied and freely renewed whenever needed by the Pasteur Institute. The sequel to this enlightened procedure is plainly discernible. In 1893 the mortality from "croup" in the French army amounted to 64; by 1895 it had fallen to 24; and in 1896 the number of deaths was only 22. Unfortunately there are other diseases which continue to exact numerous victims. Scarlet fever, measles, and influenza are still extremely frequent; but mixing as the soldier does in civil life while on leave of absence it is difficult to contend against these products of insanitation. The reservists, too, are a fruitful source of infection; but in spite of all obstacles the struggle with preventable mortality is waged with unabated zeal. "It is impossible to conceal from oneself the fact," says the Minister in conclusion, "that every cause of insalubrity in barracks has its reflection in augmented bills of sickness and mortality. This was well exemplified at Dijon when influenza was prevalent, and also quite recently in the scarlet fever epidemic at Gerardmer. It is likewise impossible to conceal from oneself the fact that all amelioration in the installation of these same barracks has its reflection in very considerable expenditure, and that my department is constrained to keep within those limits of the budget that are laid down annually."

THE WRECK OF THE "WARREN HASTINGS."

We called attention some time ago to this subject and to the fact that it had most deservedly attracted the notice of the Queen. We may be excused for referring to it again, for it is one of which the nation and the Army may well feel proud. It has since been made the subject of a special Army order in which the Commander-in-Chief expresses his great gratification "in making known to the Army the substance of a report received from the General Officer commanding at the Mauritius recording the remarkable courage and exemplary discipline displayed by the troops, under the most trying circumstances, on board the Royal Indian Marine troopship *Warren Hastings*, when that ship, steaming full speed, struck the rocks during a pitch-dark night and was wrecked near the village of St. Philippe, in the Island of Réunion, at 2 20 A.M. on Jan. 14th last. The troops on board consisted of the headquarters and four companies of the 1st Battalion King's Royal Rifle Corps, four companies of the 2nd Battalion York and Lancaster Regiment, and a detachment of the Middlesex Regiment." Lord Wolseley, after quoting from the report of Commander Holland, the officer in command of the *Warren Hastings*, that the behaviour of the troops throughout was beyond all praise, concludes his order as follows: "The Commander-in-Chief is proud of the behaviour of the troops during this trying time; he regards it as a good example of the advantages of subordination and strict discipline, for it was by that alone, under God's providence, that heavy loss of life was prevented. The Commander-in-Chief cannot close this order without expressing his admiration of the coolness, courage, and resource shown by Commander Holland, and sympathy with him and his brave officers."

PLAGUE ON A TRANSPORT.

The announcement that the transport *Dilwara* is being detained at Suez, owing to the occurrence of a fatal case of plague on board the vessel after she left Bombay, will tend to accentuate the supposition that if this disease is introduced into England it is not at all unlikely that troops returning from India may be responsible for its introduction. It therefore behoves the naval and military authorities to take every possible precaution to ensure that all troopships coming from infected ports shall be carefully dealt with in accordance with modern notions, and in harmony with the proceedings adopted by our best-equipped and best administered port sanitary authorities. We are not aware that up to the present the military and naval authorities have made any arrangements independently of the port sanitary authorities, for dealing with cases of plague or suspicious "pestis minor"; but we have heard that they have approached the Southampton port sanitary authority with a view to the isolation of any cases of plague which may be brought to that port. As Southampton is at present the port at which the majority of our troopships arrive it is obviously important that adequate arrangements shall be made beforehand, and that there shall be a thorough understanding as to what steps are to be taken to deal without delay with an infected troopship. The Southampton port sanitary authority is, we believe, one of the best equipped in the kingdom and is well able to afford the necessary assistance. Quarantine is dead in so far as the national method of dealing with infected vessels is concerned, and all vessels must be dealt with on similar lines if England is to maintain a consistent attitude in the eyes of the world.

A VOLUNTEER MEDICAL OFFICER WANTED.

On the occasion of the presentation of prizes to the 3rd Essex Volunteers on the 13th inst., at Portway, Lieutenant-Colonel Henry Palmer, 3rd Volunteer Battalion the Essex Regiment, took occasion to mention that no medical gentleman in West Ham had applied for a commission in the 3rd Essex. The 1st Essex had its medical officer, the 3rd Essex had none.

VOLUNTEER MEDICAL OFFICERS AND THE WAR OFFICE.

A correspondent writes to us under date March 22nd, a letter, in which he propounds the question: Is the Volunteer Medical Service either loyal to the medical profession itself or to the Army Medical Department in doing professional work for nothing? "I am inclined to think," he says, "that the medical officer is decidedly wrong in giving his services to either his country or to individuals for nothing. In the latter case it may be but right that he should retain his individual liberty, but in the former case he has given himself away, as in a number of corps he pays an annual subscription. Is the profession right in devoting a very considerable part of its time to the working up of bearer companies, each of which occupies the entire attention of at least one medical officer for probably four or five hours a week teaching both by drill and lectures. This year there has been a very important addition made to the duties of medical officers—i.e., the examination of recruits. This examination, though not intended to be anything like as thorough as for recruits for the regular forces, still takes some time, and also necessitates the attendance of a medical officer at headquarters weekly."

THE HEALTH OF THE ARMY IN INDIA.

Surgeon-Major Whitehead, in the report of the departmental committee on venereal disease, sums up his experience during the five years of his appointment as Assistant Professor of Military Surgery at Netley, during which he had unrivalled opportunities of studying the question of the prevalence of syphilitic disease among our troops, with the following conclusions: "(1) That the disease is more prevalent at present than formerly among foreign invalids; (2) that the type is more malignant; and (3) that the health and efficiency of the soldier are in many cases absolutely ruined by this disease, and even if he so far recover after a bad attack as to return to duty there is a great probability of his again breaking down." When we consider that this contagious and hereditary disease is largely preventable we may well urge the extreme importance of some measures being taken to put a stop to the present scandalous state of affairs.

REVISED SCALES OF PAY FOR THE ARMY MEDICAL STAFF IN INDIA.

The *Times of India* of the 6th inst. states that the revised scales of pay approved by the Secretary of State for the Army Medical Staff in India and certain grades of the Indian Medical Service will come into effect from April 1st. An Army circular will shortly be published showing the new rates.

The transport *Victoria* arrived on the 18th inst. She brought 320 patients for the Royal Victoria Hospital, Netley.

The transport *Dilwara* left Bombay on the 11th inst. with 293 invalids for Netley. Her arrival will probably be postponed in consequence of a case of bubonic plague having occurred on board.

Dr. S. Wilks, President of the Royal College of Physicians, Sir Dyce Duckworth, Sir Wm. Priestley, and Dr. John Anderson visited the Royal Victoria Hospital, Netley, on Saturday last, in connexion with the inquiry which has been instituted with regard to the prevention of contagious diseases among the men of the Army in India.

CARDIFF PORT SANITARY AUTHORITY. — The medical officer of health for the Cardiff port sanitary authority has just issued his report for 1896. Dr. Walford estimates the floating population of the port to be 7000, and states that during the year 6222 vessels were inspected; of these 5271 were in a good or fair condition and 951 in a more or less insanitary state. The systematic inspection of shipping in the Bute and Penarth Docks was efficiently performed by the chief inspector and his assistants. In only five cases was it necessary to take legal proceedings. Nine patients were admitted to the infectious diseases hospital, one of the cases terminating fatally.

Correspondence.

"Audi alteram partem."

"THE MEDICAL STAFFS OF HOSPITALS AND HOSPITAL ABUSE."

To the Editors of THE LANCET.

SIRS,—Mr. Horder assumes that I was in error in stating that Sir William Fergusson's committee recommended that medical officers attending the out patients should be paid. I have before me as I write the report of the committee appointed to inquire into the subject of Out-patient Hospital Administration in the Metropolis in 1871, signed by Alfred Meadows, M.D., chairman, J. H. Stallard, M.B., and Heywood Smith, M.B., honorary secretaries. The report states: "The following resolutions embody in brief form the conclusions at which your committee have arrived and which they recommend for adoption." No. 6 of these resolutions runs as follows: "That the governors of hospitals ought in all cases to provide some honorarium for the staff of the out-patient department." You will see, therefore, that Mr. Horder, and not myself, is in error, and I am rather surprised to find that he has not procured a copy of the report in question, and that he is evidently not familiar with its terms.

On another point raised by Mr. Horder I desire to impress upon the medical profession that so long as we have honorary medical staffs attached to our great hospitals—that is, unpaid staffs—so long will the hands of the managing committees be tied, so far as initiative is concerned, in the work of reforming the out-patient departments unless the medical profession commence proceedings by making representations to the managers. This fact makes me strongly in favour of the abolition of all honorary medical service, at any rate so far as the great London hospitals are concerned. I am sure on the grounds of economy, although it might cost the hospitals £60,000 a year to pay for the necessary medical service, such a step would in the end tend to reduce rather than to increase the average cost per bed. The medical profession now have a unique opportunity, which may not recur, of conferring together and formulating a definite policy in regard to out-patient relief and other matters of pressing importance affecting the administration of our hospitals. I wrote my letter because I realised this position of affairs, and wished, if possible, to induce the medical profession in its own interests, and in the best interests of the hospitals and all connected with them, to take up a strong position after due deliberation and conference by formulating a policy in regard to these matters. The governors and committees would thus be placed in a position to institute every reform, which may be found desirable or necessary in the best interests of the patients, the profession, and the public. I desire to thank Mr. Horder, and through him the members of his committee, for their statesmanlike determination to postpone for a time the public conference which it was proposed to hold this summer.

The writer of the leading article in THE LANCET of March 20th, no doubt unintentionally, does me less than justice. I have never stated, nor do I hold the opinion, that "the Hospital Sunday Fund and the Prince's Fund have at present but little responsibility for the use of what they collect." On the contrary, it is because I am deeply impressed with the responsibility attaching to the distribution of these funds, and to the paramount necessity of providing that our voluntary charities shall be as free, as it is humanly possible to make them, from all preventable abuses, that I ventured to write you the letter which appeared in THE LANCET of March 13th, and to state the grounds upon which I gave my entire support to your proposal, that a conference should take place in the near future of the members of the honorary medical staff, attached to every hospital of repute in the metropolis. I joined issue with Dr. Glover on the out-patient question, so far as the Hospital Sunday Fund was concerned, because I realise, that without such a conference not only the Hospital Sunday Fund, but the hospital committees throughout London, must remain practically powerless to enforce the reforms in the out-patient departments, which he has so much at heart. Premature action and an attempt at interference without the necessary authority to enforce needful reforms, are calculated to prove

more harmful than helpful. That is why I ventured to deprecate putting the cart before the horse, by moving the Hospital Sunday Fund to make representations, before we were clear that those representations could be accepted by the hospital committees with the support of their medical staffs; for with the medical staffs, as I have already stated, the chief responsibility for the present state of affairs in reality rests. I am, Sirs, your obedient servant,

HENRY C. BURDETT.

The Lodge, Porchester-square, W., March 22nd, 1897.

To the Editors of THE LANCET.

SIRS,—With reference to the letter of Mr. T. Garrett Horder in THE LANCET of March 20th I should be obliged if you would allow me to say that at this hospital we have for many years made inquiries into the circumstances of the out-patients. May I also add that a medical officer sifts the cases before they are seen by the assistant physician or assistant surgeon.

I am, Sirs, yours faithfully,

C. L. TODD, Secretary.

St. George's Hospital, S.W., March 24th, 1897.

"HOSPITAL ABUSE: THE LEEDS WORKPEOPLE'S HOSPITAL FUND."

To the Editors of THE LANCET.

SIRS,—As a general practitioner of medicine for seventeen years in Leeds, during which time I have seen a great deal of the working-man patient, also having as a student attended at the Leeds Infirmary, I have acquired some little experience in the subject discussed by THE LANCET Commissioner, which experience is directly opposed to that of Dr. Eddison and to that of Mr. Jowitt. The working man, I believe, subscribes to the infirmary 1*d.* a week, or something like 4*s.* per year. Now, very few lodges pay per head so much as that for medical and surgical attendance—the club patient can for the sum of 3*s.* 6*d.* per annum command attendance at his own home and medicine, &c. Naturally he supposes that the larger amount paid to the infirmary gives him equal rights at that institution, and I have heard this said not once but often, so often, indeed, that I was astonished that any one should make an assertion to the contrary. I have known the case of a woman possessed of independent means, able to pay 50 guineas for a surgical operation, become an in-patient of the Leeds Infirmary for the purpose of an operation; she was not a resident in Leeds, she had no claim upon Leeds, and the surgeon who performed the operation robbed himself of something like 50, or it may easily have been 100, guineas. Moreover, her friends considered her as a private patient and so termed her. In another town a lady of fortune, who spends large sums in charity, fell from a bicycle, costing probably £30, breaking her leg. She was treated in an infirmary, to which institution she presented £100 on leaving, which money I affirm was rightfully the fee of some practitioner, though perhaps no medical man would have had such a large amount of gratitude shown to him. I have known a man treated at the Leeds Infirmary for fractured arm throughout the entire course, which man lived in a good house in a good neighbourhood—such a district, in fact, where all consulting surgeons and physicians ask for fees on the higher scale. In my student days I actually extracted teeth from people I knew could afford a dentist's fees. Little, perhaps, they knew it was a 'prentice hand that held the forceps! I have known a woman in good circumstances leave her rings and jewellery at home, so advised to do by her friends, when it was necessary to consult a leading Leeds surgeon at his rooms—nay, more, she dispensed with her brougham, using the humble cab; and this course was adopted to save one guinea, the idea being that she would be charged two guineas if she appeared in her proper guise. The sufferers from trivial accidents requiring minor surgical operations are all urged to go to the infirmary. Persons even spend more in railway and cab fares than would be charged by ordinary medical men. It is obvious that those who will so spend from 2*s.* 6*d.* to 5*s.* are not those for whom a charitable institution is intended. I suppose all who subscribe—in the way of rates, at least—to the Leeds Workhouse have the right to claim a place there. Then why deny those who subscribe to the Leeds Infirmary the same rights? Both of these institutions are for the poor and sick. I do not wish my name and address to appear. I am, Sirs, yours truly,

LEEDS PRACTITIONER.

"THE MIDWIVES REGISTRATION BILL."

To the Editors of THE LANCET.

SIRS,—May I point out that your correspondent who writes anonymously in favour of registration in THE LANCET of March 20th is extremely wide of the mark. He thinks, like the promoters of the Bill, that the magic of registration will efface the horrors he describes and, like Dr. Cullingworth, that the maladies of childbirth will cease to be; in fact, that we are on the eve of a parturient millennium. One of the staple arguments of registrationists is that the educated midwife will *send* for medical aid on the first approach of danger. This is a mere supposition. The "follower" of one of these women in this parish was required in 23 per cent. of her cases in 1892 and in 8·2, 2·5, 2·7, and 2·8 per cent. in 1893, 1894, 1895, and 1896 respectively. One woman died in her confinement, there was a death from miscarriage, and an infant was sacrificed through delay in a shoulder and funis presentation. I need not add to the list of casualties; and will only say, in conclusion, that a Bill which proposes to register *bonâ fide* midwives of two years' standing, which will include most of the existing "Gamps" and which still recognises the friendly neighbour's assistance, stands self-condemned. There is no provision at all for the after-nursing, which is the most vital part of the parturient function, and as it is perfectly evident that the qualified midwife will not act as an obstetric nurse under medical supervision I utterly fail to see how the Bill will benefit "the poor" if it become law; and if I had not had the promise of Mr. Skewes-Cox to have it referred to a committee of the House so that "all parties" may be heard I would long ago have offered it a more vigorous opposition. Dr. Cullingworth is a special pleader, and his recent address on puerperal fever is largely discounted by his attitude in this question and his more recent address to the promoters of the measure.—I am, Sirs, yours faithfully,

East Sheen, March 22nd, 1897. ALEX. MCCOOK WEIR.

THE COLONY FOR EPILEPTICS.

To the Editors of THE LANCET.

SIRS,—Will you allow us to make an appeal through the columns of THE LANCET on behalf of the colony established at Chalfont St. Peters by the National Society for Employment of Epileptics. Amidst the earnest efforts for the succour of the sick and afflicted which have so distinguished this country during Her Majesty's reign one form of infirmity is still almost overlooked, and in England there are probably not less than 40,000 epileptics who lack the care which is bestowed upon their fellow sufferers amongst other nations. For both in Europe and America many institutions or settlements have been established on the lines of the famous "Colony of Mercy" at Bielefeld, in Westphalia, which affords a home for nearly 1400 epileptics. Under ordinary circumstances epileptics of the poorer classes live under conditions so unsuitable that in many instances they sink into a state of insanity and at last find refuge in the asylums. The object of the colony is to save them from this fate by taking them in hand at an earlier stage and enabling them to lead lives of usefulness and activity. The care of the insane is a heavy burden on the country, and the preventive methods of the colony will, we believe, be found in the long run to be economic as well as humane.

Amongst the numerous candidates waiting for admission to the colony, about one in ten drops out of the list every year through insanity or death, whilst at the colony itself, since its establishment nearly three years ago, only one death has occurred and only one patient has had to be transferred to an asylum. The average number of epileptics in residence at the colony has been twenty-seven. Besides the two homes at present in occupation at the colony, two others, the funds for which have been specially given, are in course of erection, and additional funds have been offered by generous friends, notably by Mr. Passmore Edwards, for the erection of several other homes, which will be commenced shortly. Within a year there will therefore, it is hoped, be accommodation at the colony for about 160 epileptics, men, women, and children. Even then the provision will be small in comparison with the need. But while the funds for building the new homes are provided, these great extensions will involve considerable

incidental outlay, for which as yet little provision has been made. A laundry will be needed for the female colonists and school accommodation for the children. The sewerage system will need extension, and the committee are of opinion that for the security of the colony when its numbers increase there must be a resident medical officer, for whom a house will have to be provided. It is estimated that on the most economical basis the outlay for absolutely necessary purposes will be £10,000, whilst for the extension of the colony on a scale really proportionate to the demand for admission a far larger sum would be needed.

Epileptics are received at the colony impartially from all parts of the kingdom, and we therefore appeal for help to the charitable public throughout the country, and we trust that during this memorable year the effort begun to help a suffering and hitherto almost neglected class of our afflicted brethren may be placed upon a footing sound, hopeful, and commensurate with their great necessities.

Contributions, which will be duly acknowledged, should be sent to the secretary, Mr. G. Penn Gaskell, at the society's offices, 12, Buckingham-street, Strand, London, W.C., or to the bankers, Messrs. Hoare and Co., 37, Fleet-street, London, E.C.—We are, Sirs, your obedient servants,

DEVONSHIRE.
HERSCHELL.
W. H. BROADBENT, M.D. Lond.
JAMES CRICHTON BROWNE, M.D. Edin., F.R.S.
C. S. LOCH.

March 22nd, 1897.

THE RECENT DEBATE UPON VACCINATION AT THE EPIDEMIOLOGICAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—As the brief report of my contribution to the discussion on vaccination at the Epidemiological Society which is given in THE LANCET of March 20th is calculated to convey an erroneous impression of my opinion on the subject of vaccinal injuries, I shall be obliged if you will allow me to make one or two corrections. 1. As regards vaccinal syphilis I stated that although every alleged case of invaccinated syphilis brought before the Commission which had occurred between the years 1889 and 1896 was subjected to a searching inquiry, not one stood the test of an investigation into all the circumstances. I did not state that all were cases of congenital syphilis. 2. It is not my opinion that all cases of vaccinal erysipelas result from post-vaccinal wound infection, although the majority are probably due to this cause; cases have occurred in which the evidence goes far to prove that the erysipelas has been invaccinated. I have discussed these questions (including the alleged transmission of tubercle, leprosy, lupus, &c., by vaccination) at length in the forthcoming volume of Allbutt's System of Medicine, to which I would refer those of your readers who may be interested in the subject.

I am, Sirs, yours faithfully,
THEODORE DYKE ACLAND.

March 22nd, 1897.

"THE COMPENSATORY MECHANISMS OF THE HEART."

To the Editors of THE LANCET.

SIRS,—Dr. Starling, in the first of the Arris and Gale Lectures, reported in THE LANCET of Feb. 27th, made the following statement, which seems to me incorrect in almost every particular: "If the aortic pressure is maintained at its normal height it is evident that in mitral stenosis the work done by the left ventricle must be increased above its ordinary amount, since a certain fraction of the work is wasted in driving blood back into the auricles. Hence, the result of mitral incompetence is, first, increased diastolic dilatation of the left auricle and left ventricle, which later becomes more or less permanent; and, secondly, hypertrophy of the muscular walls of both these cavities." All the books I have on the subject tell me that in typical mitral stenosis cases the left ventricle is *not* hypertrophied. Statistics I have published[1] indicate also that in these cases dilatation of the left auricle is *not* common, except towards the end, when compensation breaks down. Dilatation of the left ventricle is also rare. When mitral stenosis is well developed it is exceedingly improbable that the ventricle wastes its energies in driving back blood into the auricle. A systolic murmur is commonly absent, and I have indicated[2] why, even when the mitral valve is incompetent, regurgitation should not occur. It would contribute to clearness and accuracy if the word "incompetent" were not employed as synonymous with regurgitation, since a stenosed and incompetent mitral orifice is not an orifice at which regurgitation occurs to any appreciable extent. When, however, late in the history of the malady compensation breaks down and the auricle dilates, then regurgitation appears, a systolic murmur is introduced, and cardiac symptoms first become pressing. A second cause of confusion in discussing the physics and the pathology of mitral stenosis arises from not discriminating between slight and severe stenosis. Thus it is incorrect to say that hypertrophy of the left auricle is a characteristic change in mitral stenosis if the stenosis be slight, and correct if it be severe. It is surely important to take notice of such distinctions.

I am, Sirs, yours faithfully,
D. W. SAMWAYS.

Mentone, France, March 19th, 1897.

[1] Brit. Med. Jour., Nov. 28th, 1896, pp. 1567-3.

"A QUESTION FOR ANÆSTHETISTS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 20th Dr. Silk raises the question of the frequency of pneumonia in present-day aseptic surgery. I venture in this connexion to quote the following case which has occurred within the last few days at the New Hospital for Women.

The patient, aged twenty-five years, convalescent from syphilis of an aggravated form, was re-admitted on March 11th, after a fortnight's absence from hospital at a convalescent home, for operation the following day, with normal pulse, temperature, and respirations. On the 12th she was anæsthetised by Mrs. Keith, anæsthetist to the hospital, with gas and ether, for removal of hypertrophied labia. The operation was performed with the usual minute antiseptic precautions and lasted half an hour. The temperature rose the same evening to 103° F. and the urine was highly albuminous. By the 15th there was consolidation of the whole lower lobe of the right lung with rusty sputum, and two days later the left lung was attacked. At the present time the patient is recovering. She had undergone two previous operations for recto-vaginal fistula and had suffered in no way from the anæsthetic. The inhaler used at the New Hospital for Women has a celluloid facepiece, which is washed before use. It may be mentioned that two other patients had been anæsthetised before this one on the same morning, neither of whom showed any ill after effects. I would suggest that it is to the surgeons we must look for reports of these cases rather than to the anæsthetists, who seldom see the patient after the operation.

I am, Sirs, yours faithfully,
FLORENCE NIGHTINGALE BOYD,
Surgeon to the New Hospital for Women.

Harley-street, W., March 20th, 1897.

THE CELEBRATION OF THE LONGEST REIGN.

To the Editors of THE LANCET.

SIRS,—You published a note from me in THE LANCET of June 4th, 1887, making a suggestion that medical students in London should take part in the celebration of the Queen's Jubilee. Though the scheme was very favourably received by the students of that time, for many reasons the scheme was dropped. Now, although far away from the scene of action, I throw out the suggestion once more. I suggested a torch-light procession, but if any more suitable scheme was brought forward I have no doubt my idea would be passed over. But, Sirs, on this occasion there is much more to be said for the medical students to be represented in the demonstrations of loyalty to the Crown and admiration for Her Majesty. Throughout the British Empire, after the kindly expressions of the Queen and the Prince of Wales, it is extremely probable that medical interests—hospitals, nursing, &c.—will be furthered and established on a more secure and lasting basis; therefore it would be ungracious for the rising medical practitioners not to celebrate the event. Looking forward to the memorable occasion,

I remain, yours faithfully,
A. MARIUS WILSON, M.D. Durh.

Capetown, March 7th, 1897.

[2] Ibid., Jan. 23rd, 1897.

"SHOULD EPILEPTICS MARRY?"

To the Editors of THE LANCET.

SIRS,—Mr. Thistle asks how hereditary character can originate except by the influence of the environment; he appears, in fact, to think that all new characters are necessarily acquisitions—that they are impressed upon the organism after it has started on its vital career. Mr. Thistle overlooks an important source of new characters—i.e., sexual reproduction. This necessitates a double parentage; and the two parents being unlike the offspring are not exactly like one or the other, there is a mixture of hereditary tendencies which results in the development in the offspring of new characters. The offspring of a single parent are said to be exactly alike—i.e., natural variations are not found among them. Hence Weismann believes that the great purpose of sexual reproduction is to afford variations on which "natural selection" may operate. Now, Sirs, special disease tendencies (the tendency to epilepsy and insanity, for instance) are natural variations, and I see no reason why they should not originate, as strictly physiological variations may do, in sexual reproduction.

In regard to the inheritability of mutilation, we shall be wise to accept the dictum of so eminent a biologist as Professor Ray Lankester—namely, that there is no evidence of it. All supposed instances to the contrary have, as he tells us, broken down upon careful examination. Circumcision carried on for many centuries among the Jews has produced no inherited effect, nor has the docking of horses. Hereditary baldness suggests the wearing of hats by successive generations as its cause. A man does not, however, become bald because his forefathers have worn hard-rimmed hats, but because he inherits a scalp which is very susceptible to the strangulating influence on the scalp-vessels of a hard rim Men with fine hair go bald, those with coarse hair do not, and these peculiarities are manifestly independent of ancestral custom in the matter of headgear. It is not even certain that the proclivity to such a disease as gout is the result of ancestral indulgences. A man may be prone to gout even though none of his ancestors have led a gout-inducing life. The proclivity to this disease may result from a condition of tissue which is perfectly normal in itself, but one which renders the organism incapable of working healthily under a specific environment. Similarly the inherited incapacity to resist the tubercle bacillus may arise quite independently of any ancestor having been exposed to the conditions which induce tuberculosis. A negro whose ancestors for hundreds of generations may not have suffered from this disease shows a strong tendency to it when he comes to Europe. Here the inherited proneness (for in this case the proneness is inherited) is manifestly independent of a pathogenic ancestral environment, and it is possible that this line of argument applies to most, if not all, diseases which run in families. I quite agree with Dr. Adam's observations.

I am, Sirs, yours faithfully,

HARRY CAMPBELL.

Devonshire-street, W., March 21st, 1897.

"THE PHYSIOLOGY OF THE VESICULÆ SEMINALES."

To the Editors of THE LANCET.

SIRS,—If I read aright Professor Campbell Black's letter under the above title in THE LANCET of March 13th it would appear that his sole objection to accepting John Hunter's and Mr. Heath's views as to the prostatic origin of the urethral discharges voided at stool with the last drops of urine is that some examinations, microscopical and chemical, made by him of urine have enabled him to demonstrate the existence of a certain number of spermatozoa. In the hope that it may perhaps be of service in determining the exact pathological significance of the symptom under discussion, may I venture to suggest that when next a case of this nature presents itself less attention be directed to the clinical examination of the urine and more given to a physical examination of the patient, not omitting a *rectal* examination. Any such examination would have demonstrated to his own satisfaction that these discharges are prostatic in origin, as a little gentle pressure on the prostate with the examining digit will result in the ejectment of the fluid alluded to. It would also have satisfied him that the pathological condition present was an enlarged and irritable prostate. That the fluid so ejected does contain spermatozoa I am not prepared either to affirm or deny. It is not improbable that a few may be found in it, yet, if "a few swallows do not make a spring," it is equally as evident that the presence of a small number of spermatozoa does not *per se* constitute it seminal fluid, especially when we remember that spermatozoa are capable by their own inherent vitality of finding their way from the vagina through the uterus into the Fallopian tubes. I am afraid that I must agree to differ from him as to the existence of unscrupulous quacks within the profession and also that the bulk of patients with these symptoms are "multitudes of young men." For my own part I think that men well past the middle age constitute the great majority. The few young men who come complaining of these discharges are cases in which hypertrophic enlargement of the prostate has been brought about by excessive venery or self abuse. I do not consider that these cases come at all under the head of spermatorrhœa. I fail also to see any analogy between seminal discharges and menstruation, or between "spermatorrhœa" and "menorrhagia." Although the excessive discharge of semen in spermatorrhœa and of catamenial fluid in menorrhagia are both prejudicial to health and of undoubted gravity, yet here the analogy ceases. For in menorrhagia we have an increase in the amount lost at each menstrual epoch, but no increase in the frequency of such periods, while in spermatorrhœa the reverse is noticed. May I venture to question the association of ideas which leads Professor Campbell Black to postulate: "In this case a nerve impulse is conveyed to the brain from the engorged vesiculæ seminales"? I have yet to learn how distension of a hollow viscus *per se* can bring about an expulsion of its contents. I am afraid that any analogy instituted between the vesiculæ seminales and the gall-bladder or urinary bladder will not bear out his assertion. The presence of food in the duodenum originates the nerve impulses that influence the contraction of the gall-bladder on its contents. The irritation of the sensory nerve terminals around the neck of the urinary bladder starts the nerve impulses which lead on to micturition. I must confess my ignorance of the distribution of any sensory nerve fibres passing to the vesiculæ seminales, and trust Professor Campbell Black will demonstrate their existence. I believe the idea popularly accepted will bear me out when I place the centre for controlling the discharge of semen in the spinal cord close to the centres of defecation and micturition. Afferent nerve impulses are conveyed to this centre from the brain under the influence of mental emotions—as fright or lascivious ideas and sights; but the more general origin of seminal ejaculations arises from irritation in the neighbourhood of the glans penis, the urethra, or the prostate. Irritation of the glans penis takes place in coitus; by the retention of secretions under the prepuce, as in phimosis; in balanitis, and sometimes by thread-worms. Urethral irritation is due to the presence of acrid acid discharges, as in sufferers from gonorrhœa, gleet, lithuria, and diabetes, or due to urethral ulcers, polypi, or irritable strictures. The prostate is irritated by a loaded condition of the bowels, by thread-worms, by piles, by stones in the bladder. These are the usual afferent nerve impulses which lead to seminal discharges and serve to explain those cases of night losses where no mental picture arises and where perception of results is deferred till the morning. With apologies for the length of my letter,

I remain, Sirs, yours faithfully,

Rochester, March 15th, 1897. CLARENCE A. WRIGHT.

A MEDICAL SKIAGRAPH SOCIETY.

To the Editors of THE LANCET.

SIRS,—It has been decided to form a Skiagraphical Medical Society. A preliminary meeting with that purpose in view took place on Thursday last at 20, King William-street, London, when the chair was taken by Mr. Sydney Rowland. Among those who are actively supporting the movement are Dr. Macintyre (Glasgow), Mr. C. W. Mansell Moullin, Dr. Low, and Dr. Norris Wolfenden. Any gentlemen wishing to join will oblige by communicating with me.

I am, Sirs, yours truly,

DAVID WALSH, M.D. Edin., Hon. Sec.,

5, Pump-court, Temple, London, E.C., March 22nd, 1897.

P.S.—A meeting of the proposed society will take place at 5 P.M. on Friday next, April 2nd, at the offices of the Medical Defence Union, 20, King William-street, Strand, W.C.

THE PLAGUE IN BOMBAY.

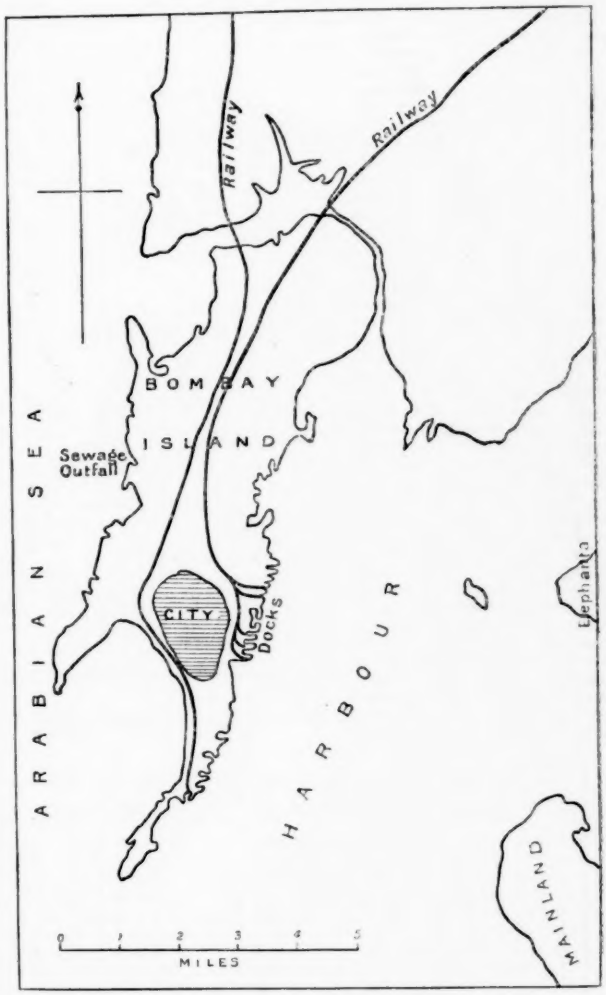
(FROM A CORRESPONDENT.)

THE Island of Bombay lies nearly north and south off the the west coast of India, in lat. 19·0° N. and long. 72 52° E. (See Fig. 1.) The situation and climate are tropical, and its peculiarities will probably be found to offer some special, if not novel, points for study in connexion with the present epidemic of bubonic plague or fever which has not yet been clearly associated with any special and prominent temporary phenomenon that might be regarded as a first cause. The city lies on the southern half of the island, the northern part being occupied by small villages, palm groves, marshes, and cultivated land. The cotton mills are mostly in this part. The southern extremity, Colaba, is a fortified military station. The population within municipal limits in 1891 consisted of 821,000 persons of mixed races, Hindus and Mohammedans predominating. The sewerage system was established some years ago, re-produced from English models at a time when the science of the subject was very little known in India. A considerable portion of the island is below high-water level, and the sewers had to be laid at such levels as necessitated a pumping station at the outfall discharging into the sea at Worlee, on the western side. Enormous deposits of silt accumulated in the sewers owing to an insufficient velocity of current, and the putrefying of this silt and of the sewage flowing over it has distinguished Bombay sewage throughout its course and at the outfall as the foulest in the world. The discharge of sulphuretted hydrogen at the outfall is very excessive and the mortar joints in the culvert are encrusted with decomposing sulphur compounds. The foulness of the sewers may be attributed in great measure to the temperature of the ground and the water of the district. The mean annual temperature of the air in Bombay is 79·13° F., or 30° above that of London, so decomposition of organic matter takes place with a rapidity quite unknown in temperate climates; and if waste matter were removed in Bombay with the same promptitude as is observed in London the smells would still be much more offensive there than here. Solid refuse, such as street sweepings, stable litter, and domestic refuse, are carted away, the sullage and nightsoil being consigned to the sewers—the latter in a manner peculiar to India.

The mean maximum monthly temperature of the ground at 11 ft. below the surface is 84·9°, and the mean minimum 80·9°. The monthly mean range is thus 4° at this depth. The lowest reading of temperature of sewage in the main sewer was 75·7° in the month of February. In England the temperature of sewage in the sewers is generally below 55°. This difference accounts to a great extent for the absence of offensive smells in English main sewers. The average velocity of the wind across Bombay is over twelve miles an hour. This average includes a considerable period of very light winds, but in frequency 72·78 per cent. of them have a westerly component. The island, which has an average width of only two miles, should be very well ventilated and healthy under the influence of the winds were it not that the city was built before the existence of municipal influences. Many of the streets are therefore very narrow and crooked, and houses in these quarters have been built up to six storeys in height. In these districts or wards the houses cover as much as 85 per cent. of the ground area, and the density of population reaches 760 per acre, a figure unequalled anywhere else in the world. Generally speaking, the greatest density of population in London is less than that of any out of twelve sections of Bombay, which average 458 persons per acre.

During the five months of rain the people have to sleep under shelter, but the temperature of this period is generally above 80°, with a diurnal range which at times does not exceed 2°. Very little covering is therefore needed at night. But as there is absolutely no control over the crowding in dwellings the limit of accommodation is fixed by the number that can get in. As many as eight coolies will sleep in a room ten feet square and eight feet high, with both door and window shutter closed. There is no chimney in such rooms, and the cubic space per man is just one hundred feet, or one-sixth of that prescribed by de Chaumont. During the present month the nights have been unusually cold, the temperature out of doors having fallen to 64°. This has driven people indoors, and has caused a rapid rise of mortality. Going out from the warm and very foul atmosphere of a room, where they have been huddled together during the night, the half clothed coolies fall easy victims to the raw air of the early morning which is still contaminated by the exhalations from the ground. It has, of course, been known for a long time that overcrowding is everywhere inimical to good health, but no active measures have been taken in India to prevent it, except in camps and barracks.

FIG. 1.

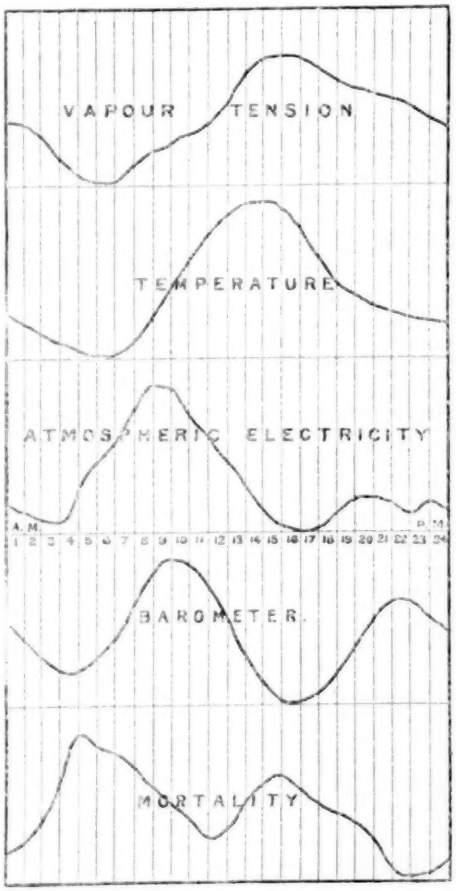


Corrected chart of the island.

Any interference on the part of public bodies with the habits of the people would be taken, at least at first, in the worst spirit, and it is now evident that interference to a very important extent must take place in order to obtain a reasonable measure of security for public health. In addition to the fixed population of Bombay, there is a constant circulation of strangers of the labouring class who come for months or years from the mainland to enjoy the better pay and the excitements of a large city. These people supply much of the skilled and unskilled labour of Bombay, and they provide most of the domestic servants and office messengers. Their habits are of the most primitive kind, they ignore every sanitary precaution, the street is their latrine, and at night they will throw nightsoil out of the windows into streets and lanes if they cannot find within doors a sink to suit their purpose. They live in the offices in the Fort without any proper quarters, and Elphinstone Circle, the best business part of the Fort, has been rendered unwholesome by the filth, office sweepings, and other rubbish which they throw into neglected courtyards and alleys. All Indian domestic servants have the same habits, formed in the jungle and acquired or inherited by the poorer classes, and they rarely receive any training in sanitary habits from their employers. There is thus a large section of the population whose lives are a constant violation of all sanitary rules and whose habits render them a constant element of danger. Their filthy habits have greatly increased the cost of conservancy in Bombay. Every appliance devised for their convenience has been abused and damaged. Public and private latrines have been damaged or filled with stones and other solid matter, and the gratings of public urinals were promptly stolen and sold or used as fireplaces. Down-take sullage pipes with their syphons are constantly filled with sand, leaves, rags, and other refuse, so that a large staff of men are constantly employed in clearing them at the expense of the city.

During the seven months of interval between the monsoons the sullage and other refuse thrown out of doors gradually foul the surface of the ground for some distance downwards. This continues to increase until the next monsoon cleanses the ground. If the rains begin with showers alternating with sunshine the wet, impure ground is heated, and a prompt increase of mortality is observed. No systematic analysis of the air of Bombay has yet been made, although there is reason to believe that the health of the city is influenced to a considerable degree by its smell. Inspectors of the Health Department had observed that foul smells were most apparent about houses at 4 A.M. and 4 P.M. long before they knew that these were the daily periods of low barometric pressure. It occurred to the writer eight years ago to inquire into the correspondence between the mortality during the day and night, hour by hour, with the movement of the barometer. The result is shown in the accompanying table of daily phenomena (See Fig. 2.) The four upper curves are the means of at least twenty years' observations at the Observatory, Bombay, and the mortality curve was obtained from the registers of

FIG. 2.


VAPOUR TENSION
TEMPERATURE
ATMOSPHERIC ELECTRICITY
A.M.
P.M.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
BAROMETER.
MORTALITY

Curves of natural phenomena showing the relation of the daily mortality to the meteorological changes.

FIG. 3.

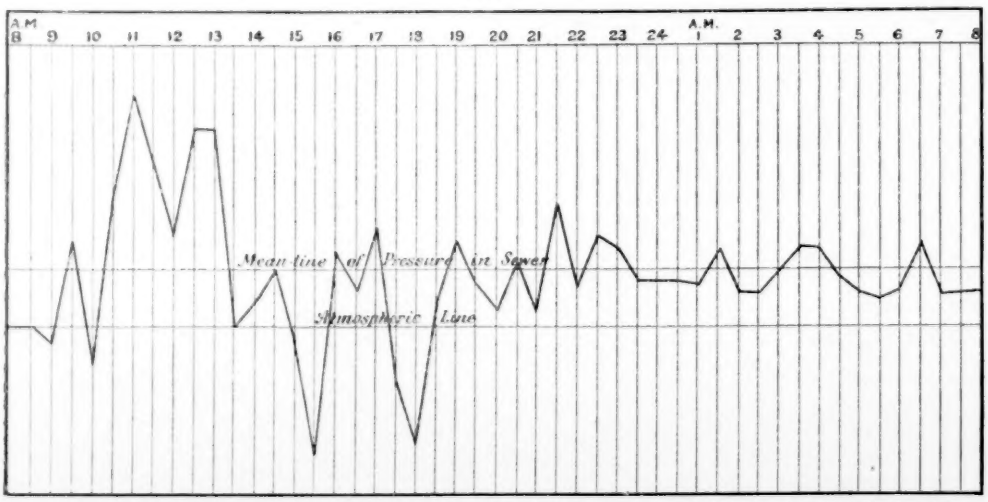


Diagram of changes of pressure in the sewer atmosphere in Bombay. This pressure was equal at 11.0 A.M. to a theoretical escaping velocity of six miles per hour.

deaths at the Jamsetjee Jejeebhoy Hospital, Bombay, extending over four years. All violent deaths were eliminated before the certificates of death were classed, and all the curves were reduced to a uniform height in preparing the diagram, so that correspondence might be the more easily observed.

The low barometer at 4 A.M. is quickly followed by the highest mortality in the day. This mortality falls until noon, and rises until within half an hour of the afternoon low pressure. Ten at night is the period of least mortality. Although the afternoon pressure is lower than that of the morning, the influences of sunlight, convection from the warm ground, and of the sea breeze all tend to purify and dilute the escaping ground air, whereas in the morning the low vapour tension and steadily falling temperature keep the impure air as it issues from the earth near the surface until sunrise, when convection begins. The early morning is usually a period of calm, and as the impure ground air is at equal temperature heavier than pure air it tends to lie until the sun rises. The low mortality at 10 P.M. appears to be due to the combined action of sea breeze, sunlight, and the temperature of the ground aided by a rising barometer. It is to be regretted that no corresponding observations have been made in other large Indian hospitals. The strength and frequency of sewer smells in Bombay led the writer to make a twenty-fours hours' experiment on the main sewer to note the fluctuations of pressure in half-hourly observations. The gauge, reading accurately in thousandths of an inch of water, was placed in a closed building and coupled on to a recess in the sewer. There was only half an hour of normal pressure (from 8 to 8 30 A.M.). At 11 A.M. the pressure was equal to a theoretical escaping velocity of 6·07 miles per hour. At 3 30 P.M. there was a minus pressure equal to a velocity of 4 59 miles per hour, and the mean of the forty-eight readings represented a theoretical escaping velocity of 3·01 miles per hour. (See Fig. 3.) This experiment indicates very imperfect ventilation. The ventilators mostly in use consist of a double tube with the heads bent and pointing in opposite directions. It had been assumed that the wind acting on either mouth would displace a cubic foot of foul air from the leeward mouth for every cubic foot of pure air injected by the windward mouth. The application of the gauge showed that the direct current was much stronger than the induced one, and that the action of the wind on the ventilators, instead of relieving pressure in the sewer, actually increased it, and increased the escapes at the ground level.

This experiment seems to be the only one that has so far been made on pressure in the sewers, although extended observations are needed to give a true basis for adequate ventilation, but it has sufficed to show in a most emphatic manner the unsuitability of a system of drainage copied from a foreign model in which the element of underground temperature could with safety be ignored. The whole interior surface of the Bombay sewers is covered with putrid matter which acts as a ferment on all the sewage that enters. The change of pressure in the sewers does not correspond with the barometric curve, but varies with the volume of liquid passing through them. If the rate of current in all the Bombay sewers could be made self-cleansing there would be a great diminution of the gases of decomposition, arising principally from the mud which accumulates on the invert, and which is at present moved along by means of an appliance drawn by a crab winch and a chain which passes through manholes. The rate of movement of the silt by this means is only three and four tenth miles a year, and the agitation of the process promotes an active discharge of gas of the foulest kind, which escapes through the open manholes. Adequate ventilation would disperse these gases above the roofs of the houses, but as they seem to be inseparable from the existing system of masonry sewers many sanitary engineers in India already believe that cast-iron pipes are the only suitable material in which sewage may be safely transported in the tropics, and that the velocity of the current should be so controlled by pumping that no deposit could lie in the pipes. This opinion gains weight when considered in connexion with sewage irrigation which is already in successful operation in Madras and Karachi. Sewage which is pumped to the outfall can be discharged within a fixed time from the period of entering the sewer, a most important consideration in the tropics.

The habits of the people at large render domestic privies attached to the sewers a practical impossibility. They will not flush them, and they persist in blocking them with solid matter. It is for this reason that in a city possessing sewers the greater part of the nightsoil is collected from house to house by men belonging to the lowest castes, and carried on their heads in waterproofed baskets to depôts where it is discharged into the sewers. Each load of about thirty-five pounds is carried an average of one and a half miles, making in all three miles of walking per load. The smell arising from these depôts is most offensive, and for this reason they can only be established in open spaces. Any attempt to multiply them would be met by the strongest opposition from the people. A small model depôt was tried, in which a basin about twenty-seven inches in diameter could receive the nightsoil of 6000 inhabitants. The baskets or pails were washed automatically in a few seconds by upward and downward jets of water; but the difficulty of locating them seems to have stood in the way of adopting a number of depôts of this kind. The *halalcores* who perform the work of removal appear to be proof against attacks of plague. Had they fled like the other Hindus the city would have been in a worse plight than in 1893, when on Friday, Aug. 11th, the Mohammedans attacked the Hindus on a question of religion and began to murder them promiscuously. On the following day, Saturday, the Hindus, recruited from the cotton mills, took the initiative to avenge their friends. Shops were closed, business was suspended, the sick were neglected and the dead unburied, while the thermometer ranged from 77° to 83° F. The *halalcores* dared not work, and filth of all kinds accumulated to a frightful extent before order was restored by the rifles of the garrison. The *halalcore* work had meanwhile been suspended in the native parts of the town, including the markets, for nearly eighty hours.

It will thus be evident that the sanitation and conservancy of a large and greatly over-populated oriental city present features and difficulties that are unknown in colder and more civilised countries.

It is doubtful if segregation could have been effectively applied by means of any cordon at Bombay to prevent the escape of the people inland. A city so densely overpopulated as Bombay is would require an enormous increase of house accommodation to lodge the people who from necessity or fear have left their dwellings and gone into the interior or to other coast towns. The huts that have been temporarily constructed in various parts of Bombay for public or for special use are avoided by the poorer classes, for whom they were made, for reasons which are now becoming apparent. As previously stated, the native in cold weather shuts himself up in his sleeping room, and obtains warmth not by extra coverings but by overcrowding. He has very little bedding, and if he has a bed raised from the floor his scanty coverings render him all the more sensitive to a fall of temperature. At this season dry, cool winds from the north-east prevail, alternating with the moist, warm sea breeze, and the land wind which now blows every night produces colds and fevers among those exposed to it. Bamboo and mat huts, although superior to tents in warm weather, are only comfortable at present in the night for those who are sufficiently protected with clothing or bedding. This is noticeable at the Arthur-road Fever Hospital provided by the Bombay Municipality for plague cases, and which has at present about ninety cases with accommodation for 100. The cool, dry air, acting on skins accustomed to a moist, warm atmosphere has had fatal effects on many of the patients. This hospital, which is in the charge of Dr. Choksey, one of the most capable and devoted of the Parsee medical practitioners, has suffered since it was opened from dearth of assistance. Nurses and ward boys have been lacking, to the prejudice of the work. This defect is now being remedied. Some of the other hospitals are having special fever wards attached. The Parsee community is the only one which has established a plague hospital of its own, which, at present, contains thirty cases, one half of which are convalescent. This hospital is due to the initiative of Dr. K. N. Bahadhurji, and is under his direction. A roomy and well ventilated bungalow was secured in a northern suburb with open space all round it, and nothing seems to have been forgotten that could conduce to the comfort of the patients or the good management of the hospital. Light screens separate the patients, giving them a sense of privacy without isolation, ample ventilation is ensured with protection from draughts, and the most scrupulous cleanliness is maintained throughout the premises. It is to be hoped that this hospital will do much in overcoming the prejudice against hospitals which is at present so common among all classes in India.

We seem to be still a long way from any reliable theory of

the bubonic plague. It is still uncertain whether the bacillus associated with the malady is a cause or an accompaniment, and this disease, so popularly ascribed to filthy surroundings, has recently broken out severely in the Bombay House of Correction, which is generally regarded as a model of cleanliness and good management. M. Haffkine has inoculated those of the prisoners who responded to his invitation to submit to the operation, but no satisfactory explanation has so far been found for the outbreak. The research of Dr. Bitter will, no doubt, be as thorough as time and circumstance will permit; but the absence of systematic observation of the air and soil in the city will probably deprive him of data that should greatly assist his inquiry into bubonic plague.

Bombay, Feb. 5th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

THE 117th annual meeting of this hospital was held on March 17th under the presidency of the Lord Mayor (Mr. James Smith). The report stated that the income for the year was £14,198 3*s.* 3*d.*, the expenditure £17,884 5*s.*, this being £1223 8*s.* 4*d.* more than that of the previous year. The average cost of each in-patient was £2 16*s.* 6*d.*, against £2 11*s.* 1*d.* in 1895. The number of in-patients was 4486, of out-patients 52,203, being an increase of 25 in-patients and a decrease of 405 out-patients. Of the in-patients admitted 859 were children under twelve years of age. There was an increase in the number of serious operations during the year, there being 1090 against 1055 the preceding year. The Lord Mayor called attention to the fact that this annual meeting would be the last one in the present building: he alluded to the history of the building, and to the vast amount of good done since its foundation by Dr. Ash in 1766. During that time there had been on the staff twenty-four physicians and twenty surgeons. The adoption of the report was seconded by the chairman of the committee, who paid a fitting and graceful tribute to the memory of Mr. Oliver Pemberton.

The Ear and Throat Hospital.

The governors and subscribers held the fifty-second annual meeting on March 18th, the Lord Mayor presiding in the absence of Lord Leigh. The total number of out-patients registered for the year was shown to be 6059, being 352 more than the previous year. In patients to the number of 373 were admitted. The registration fees paid by patients amounted to £431 18*s.* The expenditure has exceeded the income by £111 15*s.* Mr. Wilders, who had acted as surgeon to the institution for over thirty years, was elected upon the honorary staff, and Lord Leigh was re-elected as president.

The Dental Hospital.

The Lord Mayor also presided at the thirty-seventh annual meeting of this hospital on March 5th when the report was stated to be the most successful one the charity had yet presented. The total number of operations performed during the year was 22,596. The financial statement showed that the income from all sources amounted to £934 9*s.* 7*d.* and the expenditure to £705 1*s.*, leaving a favourable balance of £229 8*s.* 7*d.* Mr. Sims, dental surgeon, pointed out that the hospital was established for the benefit of the poor, but it was becoming more a dental school than a hospital. He protested against much of the gratuitous work done at the institution, and said that many went to the hospital who could afford to pay; only last week three patients who had gone to the hospital to have their teeth extracted had afterwards come to him as a qualified dental surgeon for artificial teeth. He added that one-third of the patients who attended the hospital ought not to go there at all. These statements, it is hoped, will receive the attention of the committee.

The Medical Institute.

The report of the Medical Institute for 1896 has just been issued. It states that after twenty years of existence the number of members is 196, the income is £440 2*s.* 8*d.*, and the number of books in the library 12,088. The number of members is less than it was ten years ago, and the financial position is unsatisfactory, the balance-sheet showing a deficit of £71 11*s.* 8*d.* The report further points out that a large number of practitioners in the district are not members and expresses regret that the many advantages of the institution do not seem to be sufficiently appreciated. At the annual meeting, held on the 18th inst., Dr. Saundby was re-elected president, and the debt was stated to have been wiped out by a few generous friends.

Funeral of Mr. Oliver Pemberton.

On March 11th in the quiet churchyard of Shustoke the remains of Mr. Pemberton were deposited with simple, but impressive, ceremony. A large number of representative citizens of Birmingham, including the Lord Mayor, attended by special train, together with many professional men, friends of the deceased. The service at the grave was conducted by the Rev. W. H. Poolton, Warden of Queen's College, one of the coroner's oldest friends. Many votes of condolence with the family have been passed by various public bodies with which Mr. Pemberton was connected, and on all sides much sympathy has been expressed, the depth of which has been emphasised by the death, a few days later, of Mrs. Pemberton, as noted in THE LANCET of March 20th.

The Jubilee Commemoration.

An influential public meeting was held on the 22nd inst. to establish a fund fort his purpose. The scheme includes especial attention to the wants of the sick and suffering poor, in accordance with the wishes expressed by Her Majesty the Queen. A sum will be provided for increasing the work of the District Nursing Society, to endow beds at the General Hospital, Queen's Hospital, and Children's Hospital, and in other ways to promote the permanent record of so auspicious an occasion.

March 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary.

THE reports of the medical, surgical, and pathological registrars, just issued as a small octavo volume, neatly bound in cloth, are a new feature in the annals of the Royal Infirmary. Towards the end of the year 1895 a small committee was formed to superintend the issuing of a medical, surgical, and pathological report. The present report, although comparatively small, will, it is hoped, be found accurate and of use to the investigator and the student. The statistical tables have been drawn up with every care, and as many data as possible have been inserted to make them complete. The pathological report gives a short *résumé* of each necropsy, and brief commentaries are made upon the more important cases. The medical statistics include general diseases; effects of poisons; malingering; nervous system, comprising (*a*) nerves, (*b*) spinal cord and membranes, (*c*) brain and membranes, and (*d*) functional; diseases of the circulatory system; respiratory system; digestive; urinary; ductless glands; locomotory system; integumentary; diseases due to parasites; eyes; ears; nose and naso-pharynx; and diseases of the female generative organs. The total number of medical cases recorded amount to 1122, of which 631 were males and 491 were females, with ages varying from five to sixty years and upwards. The results of treatment represent 348 as cured, 488 relieved, 107 unrelieved, 27 transferred, and 152 died. The surgical statistics deal with every variety of lesion, immediate and remote; diseases of joints, injuries and diseases of the head, spine, and nerves engaging considerable attention. Of the major operations performed in the gynæcological wards, of which there were 113, there were four amputations of the cervix, 36 cases of perineorrhaphy, 13 posterior sections, 21 laparotomies for various affections (including double ovariotomy, ovarian cysts, hæmatosalpynx, fibro-cystic tumours, dermoid of ovary, epithelial tumour of broad ligament, and ascites), 8 of curetting, 9 of lacerated cervix-plastic operation, besides other operations, from all of which only two patients died, a footnote stating that the deaths were due to intestinal obstruction not connected with the operation. A couple of pages are also devoted to a classification of diseases of in- and out-patients in the gynæcological department. The post-mortem statistics, which include 110 examinations, are full of interest. The reports would be still more complete but for the accidental omission of the statistics of the lock wards, which, no doubt, will be inserted in the next issue.

Pathological Department of University College, Liverpool.

In view of the increasing number of specimens of tumours, diphtheritic membranes, and specimens of blood (typhoid fever cases) which are sent to the pathological department for purposes of diagnosis, it is proposed to engage a skilled laboratory assistant who shall devote his whole time to section cutting and bacteriological examinations, under the direction of the Professor of Pathology. Members of the profession upon payment of a small annual subscription will be entitled to: (1) histological examination of all tumours; (2) examination of specimens of blood; (3) examination of urinary deposits; (4) examination of tuberculous and pneumonic sputa; (5) bacteriological examinations of, and supply of, test tubes for diphtheritic membranes, pus, and sputa; and (6) the examination of the blood of suspected cases of typhoid fever, and supply of capillary tubes for same. The Professor of Pathology, Dr. Rubert Boyce, hopes to commence the examinations in May next, if members of the profession will lend their support to the scheme by becoming subscribers.

Admissions of Lunatics to the Liverpool Workhouse.

The admissions to the lunatic wards of the Liverpool Workhouse for the last three months do not bear out the statements that lunacy is everywhere largely on the increase, inasmuch as fewer cases have been certified for removal to that institution than during the corresponding periods of the last seven years.

Health of Liverpool.

The medical officer (Dr. Hope) reports that the births registered in the city during the week numbered 474 and the deaths 285, a death-rate of 23 per 1000 per annum. Of the deaths 70 occurred in public hospitals, and 98 were those of children below five years of age. Lung diseases occasioned 71 deaths; tuberculosis, 35; brain diseases, 35; heart diseases, 24; and zymotic diseases, 34. 118 infectious cases were notified and 44 discovered by officers of the committee; 361 patients were in the city hospitals, against 349 the preceding week. The mean temperature for the week was 40·6° F.

March 23rd.

WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The University College of South Wales and Monmouthshire.

A MEETING of the council of this College was held in Cardiff on March 17th, under the presidency of Dr. Price. A letter was received from Messrs. Samuel Brothers of Cardiff enclosing a cheque for £500 for the founding of a medical scholarship at the College. The donors were desirous of making the gift as a recognition of the benefits enjoyed by the Jewish community during the sixty years of the Queen's reign. A cheque for £169 was received from the town and working men of Pontypridd as a further contribution towards the building fund of the College. The council then considered applications for the post of Professor of Anatomy, and resolved to invite Mr. Dickson of Trinity College, Dublin; Professor Fawcett of University College, Bristol; and Mr. Manners Smith of Mason College, Birmingham.

The Proposed Convalescent Home for Bristol.

The Mayor of Bristol issued last week an appeal to the citizens of Bristol for funds towards the proposed convalescent home. He states that the committees of the infirmary and hospital urge the need of the home, and it has been proposed that, without charge to them, sixty beds should be reserved for their patients, and that twenty beds should be retained for other cases that will be admitted on such terms as will be ultimately decided upon. Thus it is estimated that annually 1000 of the infirmary and hospital patients and about 350 others will materially benefit by such an establishment. For the building, equipment, and endowment of the home at least £50,000 will be required. Several subscriptions have been promised, and Mr. E. P. Wills has offered £10,000 on condition that a further £50,000 is raised, and an additional £3000 should the fund reach £97,000. Mr. H. O. Wills has given £10,000, and the total contributions by members of this family, assuming the scheme is completed, will be over £25,000.

The Notification of Infectious Diseases at Bristol.

At a meeting of the Bristol Town Council, held on March 9th, it was resolved that the port sanitary authority should adopt the Infectious Diseases Notification Act, to apply to yellow fever, plague, and measles, in addition to the diseases specifically mentioned in the Act.

The Literary and Philosophic Club, Clifton.

Last week, at Clifton, Professor Lloyd Morgan, the Principal of University College, Bristol, gave the second of his two lectures in connexion with the Literary and Philosophic Club, Clifton, entitled "Habit and Instinct." The lecture was most interesting and gave many details showing how far creatures act from instinct and how far from acquired knowledge and experience. Professor Morgan mentioned some of the things noticed when a number of young birds were hatched out in an incubator, and therefore kept entirely free from any parental teaching. He found that most of these young birds instinctively pecked, seized, and swallowed any small object which attracted their attention, but were not guided by instinct in selecting what was good or bad for them.

The Infectious Diseases Notification Act at Bath.

At a recent meeting of the Bath Sanitary Committee the medical officer of health (Dr. W. H. Symons) reported that during the last few months several instances of default under this Act had come to his knowledge. Twice recently he had had complaints from medical officers of health of persons being sent from Bath in an infectious condition, and more often he had found persons coming to Bath in a similar condition. On investigation he generally found ignorance or thoughtlessness to be the cause, and under such circumstances deemed a warning sufficient; but there was one case in which he thought there ought to be a prosecution, and consequently the sanitary committee decided to prosecute.

The Cardiff Guardians and Vaccination.

At the meeting of the Cardiff guardians, held on March 6th, it was decided, upon the recommendation of the vaccination committee, that it should be made a condition of the contracts for public vaccination that vaccinations should be with calf lymph, and that the fee for successful vaccination be increased by 2*d.* in each case to meet the extra cost, which it is estimated would amount to about £40 a year. The committee recommended that the fee should be increased by 3*d.* for each case, but one guardian objected "to the virtual increase of salary proposed, and moved that the fee be increased by 2*d.* only," and this amendment was adopted.

Reduction of a Medical Officer's Salary.

At the last meeting of the Carmarthen board of guardians a letter was read from Mr. W. Lewis Hughes, M.R.C.S. Eng., L.S.A., resigning his appointment as medical officer for the Carmarthen Urban Division owing to ill health. The resignation was accepted, and the board decided to advertise the vacancy and reduce the salary from £80 to £70 per annum.

A New Hospital for Poole.

At a meeting on March 9th, at Poole, the Mayor (Lord Wimborne) explained his recent offer to give, as a commemoration of the Queen's reign, to the borough of Poole a mansion and grounds now known as the Cornelia Hospital and £1000 towards the endowment fund of the hospital. It was resolved to accept Lord Wimborne's gift and to raise an endowment fund. Lady Wimborne has practically maintained the Cornelia Hospital, Poole, for the past eight years, and has just issued the report for 1896. The balance-sheet shows a deficiency of £592, but this has been made up by the generosity of Lady Wimborne.

March 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Edinburgh Medico-Chirurgical Society.

A SPECIAL meeting of this society was held last week, at which the plans of the new City Hospital were exhibited by means of limelight, and described by the city architect and the medical officer of health. The chairman of the public health committee of the town council explained at the outset the reasons for the selection of the site for the new hospital, and stated that it was the desire of the committee to

carry with them the support of the medical profession. The site of the new hospital was approved of by the meeting, and it was agreed that the number of beds should not be less than 600. This is an interesting and important departure and should not pass without being emphasised. It is doubtful if a public health body has ever before brought its proposals and plans before a meeting of medical men for criticism. The step indicates an enlightenment and liberality which is greatly to the credit of the public health committee and its convener, Baillie Pollard; and it is an example which might be followed with great advantage by many other public health authorities.

Scottish Association for the Medical Education of Women.

The seventh annual meeting of this association and the prize distribution to the students attending its college in Minto House, Edinburgh, were held last week. Sir Alexander Christison presided, and Sir William Muir, Principal of the University, presented the prizes. In the report it was stated that there were now eighty students at the College and that they had begun with nine. Reference was made to the opening of the University degree to women and the recognition of the school by the University.

The Faculty of Advocates and Chalmers's Hospital, Edinburgh.

The Edinburgh Faculty of Advocates has determined to follow the Royal suggestion that Her Majesty's Diamond Jubilee should be characterised by works of beneficence. At a meeting last week it was decided to subscribe money for the extension of Chalmers's Hospital, a hospital of which the Faculty is the governing body.

Changes in the Royal Infirmary, Edinburgh.

Dr. Wyllie's term of office as a physician to the Edinburgh Royal Infirmary will expire at the end of this month. Dr. Bramwell, the senior assistant physician, will become a full physician, and there will be a general move among the assistant physicians. Dr. Gibson will go to the wards devoted to the instruction of women; Dr. Bruce will be attached to Sir T. Grainger Stewart; Dr. Philip to Professor Fraser; and Dr. Russell to Professor Greenfield; the others will retain their former places. Much regret is expressed at Dr. Wyllie's retirement, for he has long been regarded by his colleagues and by the students as one of the greatest personalities in the infirmary.

Glasgow Medical and Chirurgical Society.

This society met on the 19th inst., the President, Dr. W. L. Reid, being in the chair. Dr. D. J. Mackintosh gave a lantern demonstration to illustrate the value of the x rays in hospital practice, more especially as regards dislocations and fractures. The slides exhibited demonstrated: (1) the value of the rays for diagnostic purposes in cases where physical examination was not conclusive; (2) the actual displacements which occur in various classical fractures; a number of slides showing cases of Colles's fracture and Pott's fracture were very successful; and (3) the conditions which exist in ununited and in badly set fractures. Amongst the most striking of the photographs were those illustrating congenital dislocation of the head of the femur, the presence of a coin in the coils of the small intestine low down in the pelvis, and several dealing with various injuries in the region of the elbow-joint. Dr. Mackintosh also illustrated the use of the cinematograph for purposes of medical demonstration. He threw upon the screen a series of rapidly taken photographs of patients suffering from locomotor ataxia diphtheritic paralysis, and hemiplegia, and as these walked round and round in a circle the peculiarities of the gait in each case were very manifest. Dr. Maitland Ramsay gave a lantern demonstration to illustrate the diseased conditions of the eye due to syphilis. The slides were of great beauty and formed a complete clinical picture of the diseases under consideration. They included chancre of the upper lid, chancre of the lower lid, specific tarsitis, disease of the cornea in acquired syphilis, gumma of the iris, gumma of the ciliary body, and specific choroiditis and retinitis. A number of slides illustrating changes in the eye and in the general physiognomy as a result of inherited syphilis were also exhibited.

Medical Lectures in Glasgow.

At the February meeting of the Microscopical Society Dr. L. R. Sutherland, assistant to the Professor of Pathology at the University, gave a demonstration of the effects of tuberculosis as seen in various parts of the body. The demonstration included a large number of preparations, microscopic slides, and diagrams. In his remarks Dr. Sutherland discussed the nature of tuberculosis, the modes of infection, and the conditions generally which influenced the incidence of the disease. On the motion of Mr. J. Rankin, B Sc, he was awarded a cordial vote of thanks.—At a recent meeting of the Philosophical Society Dr. John Macintyre gave an account of the more recent advances made in connexion with the x rays. He claimed to have sent the rays sixteen feet across a room, through a partition, and then to have examined with them the contents of a box in the next room. The use of the rays for various purposes were illustrated, including their application as a test to distinguish genuine diamonds and pearls from false ones. Dr. Macintyre also showed the movements of the knee-joint by means of the cinematograph. He expected that before long all the movements of the body would be recorded by means of the photographic film.—The first of a series of lectures to ladies organised by the Total Abstinence Society was delivered in Glasgow by Dr. P. A. Young of Edinburgh on the 16th inst. Dr. Young argued that physiology, experience, and the statistics of life insurance societies were strongly in favour of total abstinence from alcohol in all forms.

Glasgow University.

The close of the session has been succeeded by the onset of the professional examinations, which are continued throughout the whole of the present week. The lists include a considerable number of women candidates.—At a meeting of the members of the Union on the 17th inst. Mr. J. C. Monteith was elected President; Professor Joseph Coats, Vice-president; Mr. F. A. Macquisten, B L., treasurer; and Mr. Anderson McKendrick, secretary.—The last meeting of the Queen Margaret College Medical Club was occupied by a paper on Student Life in Vienna by Dr. Margaret Dewar.

St. Andrews and Dundee.

The wearisome quarrel between the academic authorities in these two cities appears to be entering on a more dramatic phase. There has always been a minority in the University Court at St. Andrews willing, if not anxious, to come to an arrangement with Dundee so as to secure for the University the advantages which Dundee is able to offer to students of medicine and science. The recent decision of the Privy Council practically upheld the contention of this minority to the effect that by the ordinances framed by the Universities Commissioners Dundee College is an integral part of the University of St Andrews. But the majority of the Court appear to be resolved to pursue their course heedless of the Privy Council and its decisions. Accordingly the minority have declined to take part in the meetings of the Court, and at a meeting on the 19th inst. Principal Donaldson, on behalf of himself and five other members, including Principal Stewart and Principal Mackay, M.D. Glasg., of Dundee, lodged a written protest against the validity of the proceedings and then withdrew from the meeting. Thereafter the majority proceeded to transact the business of the Court, including the appointment of a Professor of English Literature. However interesting the moves in this academic struggle may be as mere exhibitions of diplomatic ingenuity, there are signs that the public is becoming somewhat disgusted with the performance. It is, indeed, nothing less than a scandal that the management of an important national institution should be conducted in such a way as to prejudice the educational and academic interests of two colleges, each of which in its own sphere is capable of contributing an element of value to the success of the University.

Medical Appointment.

Mr. J. D. Graham, M.B., C.M. Glasg., has been appointed House Surgeon to the Smithston Asylum, Greenock, *vice* Mr. W. S. Cook, B.Sc., M.B., C.M. Glasg., resigned.

March 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Illness of the Archbishop of Dublin.

LORD PLUNKET, the Archbishop of Dublin, is seriously ill. He is attended by Sir Francis Cruise, of the Mater

Misericordiæ Hospital, and Sir Philip Smyly, of the Meath Hospital.

The Health of Dublin.

The unfortunate coincidence in the city of three different epidemics—namely, scarlet fever, measles, and whooping-cough—has rather overstrained the resources of the public health officials and left them and their department open to much adverse criticism. At the annual meeting of the Dublin Sanitary Association the Registrar-General (Dr. Grimshaw) stated that according to the returns at that precise date "the only place that beat Dublin in the height of its death-rate was Bombay, which had a mortality of 102 per 1000." Mr. Roche also made a strong speech on that occasion, and has ever since been bombarding Sir Charles Cameron with questions. Why are not all the schools in the city closed? Why are not the contents of the pawnbrokers' shops disinfected? Why has not the state of the tenement houses been set right? Why are fifty-six slaughter-houses allowed to exist in the city in addition to the public abattoir belonging to the corporation? On the other hand, the Lord Mayor has recently said in public that the present mortality is largely owing, in his opinion, to poverty and wretchedness among the labouring class in Dublin, brought about by the prolonged building strike of last year. The Dublin Sanitary Association, moreover, should remember that while Sir Charles Cameron and Mr. Stafford, the medical inspector under the Local Government Board, proposed the establishment last year of a special hospital outside the city for the treatment of infectious disease, the project was strongly and effectively opposed by the association. The main drainage works are being pressed forward by the corporation with commendable energy and at an expenditure which will ultimately reach at least £200,000. An inspection has recently been made of all the tenement houses, while the 5000 dairy cows in the city have been examined. Circulars have been sent to all the city schools recommending that they should be closed, the corporation not having any power to close them compulsorily or to inflict the money loss on the teachers which such a measure would entail. Many of the schools have, however, been closed. The private slaughter-houses cannot be closed without a considerable expenditure in the shape of compensation. The whole problem is a difficult one, and at bottom to a large extent a question of money. The city rates have gone up by leaps and bounds and are now over 9*s.* in the pound, and the municipal accounts for 1896, which have just appeared, show that they are likely to become much higher. The cost of the sanitary department rose last year from £20,922 to £23,710; nearly £8000 were added to the cost of the cleansing department, which advanced from £40,000 to £48,000; and the sewer-rate expended in the North and South districts was increased by £5000. These items may be classed as sanitary, and they show in the gross an increase of £13,322, or nearly 20 per cent.

County Antrim Infirmary, Lisburn.

From the annual report I find that 325 patients were treated in hospital during the year ended Nov. 30th, 1896, and 604 in the extern department. There were 211 accidents attended to last year and 72 operations performed. The infirmary has been selected by the Lady Pembroke Committee of the Irish Workhouse Reform Association for the purpose of training nurses for union infirmaries, and a probationer has been sent to be trained at Lady Pembroke's expense. This will be a boon to boards of guardians in Ireland, who by Lady Pembroke's generosity will have trained and educated women of the middle-class as workhouse infirmary nurses.

Belfast Royal Hospital.

At a special meeting of the corporation of the Belfast Royal Hospital held on March 15th it was decided to raise a sum not exceeding £2500 out of the invested funds of the hospital to pay off the present debt. This has been done as it was thought unwise, by making any special effort to raise funds, to interfere with the present scheme for the erection of the new hospital in Belfast, the subscriptions to which amount now to £73,000, including the large sum of £5000 given by Mr. Gallaher.

The Proposed New Fever Hospital.

A memorial signed by over 100 members of the medical profession practising in Belfast objecting to the site at Purdysburn for the new Fever Hospital is about to be presented to the Lord Mayor and city council. In this memorial, which has been drawn up by a sub-committee appointed by the councils of the Ulster Medical Society and of the North of Ireland Branch of the British Medical Association, the objections which exist to the proposal to erect the new hospital for infectious diseases at Purdysburn are thus stated: (*a*) the distance is too great (two to eight miles) for the transference of fever patients; (*b*) the natural reluctance of parents and relatives to permit the removal of friends to hospital would be increased owing to the difficult access to the place, as daily inquiries could not be made, and if urgent danger arose the prompt summoning of friends would be more difficult and might entail on the working classes the expense of a vehicle; (*c*) the profession would have greater difficulty in insisting on the removal of infectious cases to a hospital where they would be out of reach of their relatives, and so difficulties might arise in the proper carrying out of the Notification of Infectious Diseases Act; (*d*) owing to its distance the medical service of the proposed hospital would probably be more expensive; and (*e*) a hospital at Purdysburn would be unsuitably placed for the purposes of the training of medical students, and while this deprivation would in the first place fall on the Belfast Medical School, its effects would ultimately re-act upon the entire community. On all these grounds the memorialists pray that the proposal to erect an infectious diseases hospital at Purdysburn should be re-considered, and some other more convenient and accessible site selected.

Proposed Collection for the Cork Hospitals during the Diamond Jubilee Year.

The Earl of Bandon, Lord Lieutenant of the county of Cork, and the Mayor of Cork last week addressed a letter to the newspapers suggesting that as large sums would probably be spent by residents of the city and county in celebration of Her Majesty's Diamond Jubilee year, an effort should be made to pay off the debts due by the various city hospitals. A meeting in furtherance of the project was held last Saturday, and steps were taken to form an influential and representative committee. It is expected that the revenue of the hospitals will be considerably augmented.

Presentation.

Mr. Allsom, L.R.C.P. Edin., &c., who for many years had acted as compounder at the Cork Union Hospital, recently resigned, when certain of his colleagues presented him with a handsome silver tea service.

March 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Buildings of the Faculty of Medicine.

THE new buildings of the Faculty of Medicine will be completed before very long—at least, the demolition of what remained of the old buildings has commenced. It is more than fifteen years since the re-building of the Faculty's premises began, and it has proceeded slowly, the pulling down going on bit by bit simultaneously in accordance with the plan of the architect, M. Girain. The practical school with its laboratories and dissecting-rooms was built first upon the site of the old Clinical Hospital. With regard to the latter, the first portion built comprised the private rooms of the dean and an enormous building, of which the first floor serves as a library, while the ground floor has for ten years remained unused, its immense rooms being inconvenient for most practical purposes. At present the work of destruction is aimed at the final portions of the old buildings, where M. A. Gautier, the Professor of Chemistry, used to have his laboratories, and where the examination rooms formerly stood. A hundred years ago this building was a church, and one can still see the great lancets for the windows and the remains of the apsidal choir. There also used to be shops on the ground floor, and the names and callings of the shopkeepers can still be read over the façade. The pulling down of the walls exposed to view the examination rooms where so many medical men have undergone the agony of examination, and many students were spectators of the process of demolition.

Death from Hydrophobia.

Two months ago a rich country miller and five other persons who had been bitten by a mad dog came to Paris and underwent the antirabic treatment of the Pasteur Institute. At the end of a month they returned home. A

few days ago the miller developed sundry disquieting nervous symptoms and hurried to Paris for treatment, but he died from hydrophobia the same night in the hotel where he had stayed, close to the Institute. The other five who were bitten are doing well.

Deaths of well-known Medical Men.

Dr. de Bossi, the oldest medical man in France, has just died at Havre, aged 104 years, in full possession of his faculties. Dr. Morvan has died at Lannilis, aged 73 years. In 1871 he was a member of the Legislative Assembly, but had for a long time given up politics for the sake of scientific work. He was the first to describe the group of clinical symptoms known as "Morvan's disease," which he considered to be a form of syringomyelia. Since then Dr. Zambaco Pacha of Constantinople, having travelled in Brittany, where Dr. Morvan studied the disease and where it is very common, came to the conclusion that it is an abortive form of leprosy. Dr. Morvan was a corresponding member of the Academy of Medicine.

Oysters and Infection.

The Academy of Medicine has been inquiring into the question of infection by oysters, especially with regard to enteric fever. M. J. Chatin has demonstrated that in natural sea-water the typhoid germ dies rapidly, and that as the oyster picks them up under these conditions they cannot do much harm. Unfortunately, many oyster breeders, with a view to the more rapid fattening of the oysters, lay them down at the mouths of rivers in a mixture of salt and fresh water, and it is this fresh water charged with all manner of germs collected in its course which infects the oyster beds and oysters. M. Chatin recommends that some steps should be taken to guarantee the purity of the fresh water. In the medical world it is suggested that this inquiry has been undertaken with a view to the nomination of an inspector of oyster culture and also to appoint a hygienist who is a *protégé* of the Academy.

The Medical Scandal.

The much-discussed abortion case of last November came on for trial at the assizes on Monday. The defendants are Dr. Boisleux, well known for his gynæcological work and particularly for his paper upon Inter-ligamentous Incision of the Vaginal Wall, and Dr. de la Jarrige, who is accused of having been an accessory. On Nov. 21st last Dr. de la Jarrige was consulted by a young woman named Thomson, an employée of M. Redfern the costumier. She was brought by her lover, M. Mansuy, a friend of Dr. de la Jarrige, and well known in sporting circles under the name of Musany. Miss Thomson complained of abdominal pains, but concealed the fact that she was really pregnant, and Dr. de la Jarrige thereupon sent her to Dr. Boisleux. She next went to a midwife to whom she made overtures to procure abortion, but the midwife refused. Then she returned to Dr. Boisleux, who proposed curetting the uterus, which operation was done at Dr. Boisleux's private house in the presence of Dr. de la Jarrige and M. Mansuy. The curette brought away some placental fragments, and in endeavouring to get these all away Dr. Boisleux perforated the uterus, pulled a knuckle of intestine into the perforation, and the head of the fœtus escaped into the peritoneal cavity. Dr. Boisleux then proposed a laparotomy, but M. Mansuy refused permission for this. During the night symptoms of peritonitis set in, and at 5 o'clock in the morning Dr. Boisleux performed laparotomy, and removed the uterus, but the patient died soon afterwards. The Medical Inspector of Deaths refused the order for burial and regarded the death as a non-natural one. Dr. Boisleux, Dr. de la Jarrige, and M. Mansuy were then all summoned to appear before the Commissioner of Police, and on learning this M. Mansuy blew out his brains. The two medical men attributed the death after operation the one to embolism and the other to peritonitis. A post-mortem examination was ordered, and made by Professor Brouardel, who sent in a report, upon which both medical men were arrested. Investigations were made at the "clinic" of Dr. Boisleux, which was found to be very badly arranged and dirty, and from the books which were seized it appeared that in six years he had had twenty-six deaths from operations. The two medical men declare that they are the victims of a mistake, and were deceived by the patient as to her state of pregnancy. Public opinion and the press are most hostile to both medical men and their "clinics." The accused have been four months in prison awaiting trial, as Professor Brouardel's time has been taken up with the Conference at Venice. The medical world is painfully impressed by this matter, and it is generally regretted that Professor Brouardel was so hasty in demanding the arrest. As a matter of fact, there are no direct proofs of guilt against the accused, and the post-mortem examination showed nothing contrary to their declaration that they had made a wrong diagnosis, as many other gynæcologists have done, especially when their patients were anxious to deceive them. Proof of guilt can only exist in the shape of letters or depositions, and it is uncertain whether any such exist. The case will probably last until Saturday, March 27th, as there are no less than 150 witnesses to be heard.

March 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Balneological Association.

THE meetings of the Balneological Association were held in the Pharmacological Institution from March 12th to March 14th. The President, Professor Liebreich, being ill, the chair was taken by Professor Winternitz of Vienna, who delivered an inaugural address in which he made special reference to the late Dr. Brand of Stettin, the advocate of hydrotherapeutics in enteric fever, and then read a paper on the Treatment of Graves's Disease. He first dealt with the etiology of this condition, mentioning cases in which the symptoms had developed after a severe nervous shock, and gave an account of the results obtained by the administration of the extract of the thyroid and the thymus glands. These results, he said, were far from being satisfactory. There was, moreover, no symptom in Graves's disease which could not be successfully treated by hydropathy or by dietetic and mechanical methods. The increase of the cardiac action and the characteristic tremor require the application of cold bandages on the neck and the back and massage. The diarrhœa is to be treated symptomatically. Milk and vegetable food are beneficial, but butcher's meat is injurious. Professor Winternitz then gave a detailed account of the daily life of the patients under treatment for Graves's disease in his asylum. Although he was, of course, not able to cure every patient, he had always succeeded in relieving the pains. In the discussion Professor Schott of Nauheim said that he was less confident than Professor Winternitz as to the curability of the disease, for patients who had apparently been cured often relapsed. He had never seen any good results from the administration of glandular preparations. He recommended the use of iodide of sodium. Dr. Lindemann of Heligoland then spoke on the action of sea bathing in diseases of the stomach. The majority of practitioners, he said, held it to be an established fact that sea bathing was not useful in such complaints, but this opinion was only correct to a certain extent. Many patients suffering from digestive troubles who had derived no benefit from the mineral springs recommended in these cases were finally cured in Heligoland. The bracing air of the sea acts as a powerful tonic, and the good appetite of patients at the seaside proved its salutary influence on the digestive organs. Irritable patients as a rule do not benefit from the sea air, but other neurasthenics feel very well. Gastric ulcers and carcinoma, of course, became worse, and these diseases are, indeed, rather frequent among the natives. In the discussion some members stated that the recommendations of medical men in matters of diet could not be carried out so satisfactorily in seaside hotels as in inland health resorts. The establishment of homes or special institutions for invalids at the seaside would be necessary if good results were to be generally obtained.—Dr. Lahnsen of Brunnthal read a paper on Agrypnia. After some general remarks on the physiology of sleep and dreams, he said that agrypnia was one of the first symptoms of neurasthenia. More than one-half of a given number of neurasthenic patients complain of sleeplessness. Three forms of agrypnia must be distinguished. The first is very often present in exceptionally active persons, who are able to work from morning till night and to get up very early after only a few hours of sleep; they do not require much sleep, and as a rule do not feel ill although they sleep less than they ought to do. The second form is met with in persons who, although they may be very tired, nevertheless

do not fall asleep until several hours after they have gone to bed. This is the genuine form of neurasthenic agrypnia. In the third form the patients fall asleep at once, but awake again very soon. With respect to treatment, Dr. Lahnsen was of opinion that hypnotics should not be used, except in acute agrypnia. Chronic forms must be treated by dietetic and hygienic methods. A stay in a small, quiet country place is to be specially recommended to neurasthenic patients. In the discussion it was pointed out that nervous people are apt to exaggerate their sleeplessness, and that it is doubtful whether agrypnia is to be regarded as a symptom or as a cause of neurasthenia.—Professor Baginsky read a very interesting paper on the Bacteriological Examination of the Water in the "basin baths" of Berlin. He mentioned that he had met with several cases in which children were attacked with enteric fever after having made use of public baths. The chemical analysis of water from the baths did not show any remarkable alteration. He then made microscopical examinations of water taken from several well-known public baths both before and after use. In one of these establishments where the water-supply is derived from wells, and the bath is cleaned every day, the recently admitted water contained many bacteria. After twelve hours, when 200 persons had used the bath 90,000 germs were found per cubic centimetre of water; and after twenty-four hours, when 549 people had been in the bath, 270,000 germs per cubic centimetre were found. The bacteria observed in the water were the following: Bacterium coli commune, proteus vulgaris, bacillus subtilis, bacillus aquatilis fluorescens, staphylococci, and sarcina. In animals the first mentioned bacillus proved to be virulent. Professor Baginsky was of opinion that bathing establishments should be under a stricter control, that there should be a constant inflow of fresh water during the time of bathing, and that bathers ought to rub their skin with a brush both before and after being in the water. Dr. Kisch of Marienbad said that in watering-places the conditions were rendered worse by the fact that the bathers were sick people. The use of large baths ought to be restricted and single bathing ought to be the general rule. Some members doubted whether the germs present in ordinary water would also be found in mineral springs.—Dr. Mendelsohn of Berlin read a paper on the Treatment of Renal and Vesical Calculi by the Water of Mineral Springs. The chemical agents which dissolve calculi in test tubes are useless in the living organism. The good results obtained in lithiasis by the use of mineral waters do not depend on their solvent power, but on their diuretic action. To induce free diuresis must be the principal object of treatment. Calculi probably commence from crystals deposited from very concentrated urine; it is an error to suppose that they originate in uric acid crystals adhering to coagulated albumin. In the discussion Professor Winternitz remarked that alkalinity of the urine must be combated by vegetable food; according to him an infusion of birch-leaves is very efficient in the removal of calculi.—Dr. Ziegelroth then read a paper on the Relation between Scientific Hydrotherapy and the Antitoxin Treatment. His opinion that the antitoxins would soon be things of the past was strongly opposed, even the most fervent balneologists acknowledging that although the exact value of Behring's method may be a matter of controversy, yet they were not entitled to reject it.—The other papers were read by Dr. Hansemann, on Cures and Curability; by Professor Eulenburg, on the Mechanical Treatment of Cerebral and Spinal Diseases; by Dr. Wegele, on the Chemical Examination of the Gastric Juice; by Dr. Schubert, on the Influence of Venesection on Diseases of the Skin; and by Dr. Siebelt, on the Winter Climate of the Silesian Mountains.

March 23rd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Parliament and the Profession.

IN his delightful "Memoirs of an ex-Minister" the late Lord Malmesbury goes out of his way to compliment practitioners of medicine on their sagacity in politics, and cites an instance where he distinctly benefited by taking the opinion of a well-known metropolitan consultant on a question before Parliament. Continental experience goes far to confirm his lordship's judgment, and in no nationality more than the Italian. "Legion" is, in truth, the appropriate name for the far-seeing and patriotic publicists and statesmen who have contributed to the unity and independence of Italy. It was Giovanni Lanza, a general practitioner in Piedmont, who was Victor Emmanuel's trusted political adviser during a very critical time, and who, as Premier of the Right; conducted Italy to Rome in 1870. It was Agostino Bertani, the Genoese surgeon, who headed the medical department in Garibaldi's various expeditions and who, before he died, gave his country the "Codice Sanitario" which revolutionised and made uniform her whole system of State medicine. In a more recent decade it was Guido Baccelli who held the portfolio of Public Instruction with such advantage to the higher or professional education; and in the elections now going on throughout the kingdom the medical candidates (of whom there are forty) are conspicuous, so far as their printed addresses enable one to judge, for the enlightenment and public spirit which inspire their appeal to the constituencies. Some of their names are well known to readers of THE LANCET as contributors to its pages—for instance, Count Guido Tizzoni, Professor of Pathology in the University of Bologna and Director of the Pathological Institute attached to the same seat of learning, whose monograph on the Bacillus of Tetanus in your columns is still authoritative, and whose antitoxin (in the discovery and preparation of which he had for coadjutor Eugenio Centanni of Florence) is now well known to the profession. Count Tizzoni is contesting the Vico Pisano division of Pisa in the Liberal interest. Then there is Dr. Giovanni Battista Queirolo, who holds the chair of General Clinical Medicine in the Pisan University, whose intervention at the yearly professional congresses has often given THE LANCET occasion to notice his originality of view in *questiones vexatæ* of diagnosis and treatment and his power of criticising adverse positions or of vindicating his own. He, too, comes forward in the promotion of Liberal principles and for the constituency of Rapallo on the Riviera Ponente. Again, there is Dr. Antonio Celli, Professor of State Medicine in our University and Director of the Hygienic Institute, whom many of your readers must remember as one of Italy's ablest representatives at the International Congress of Hygiene and Demography held in London six years ago, and whose subsequent professional visits to our provincial schools have fructified in many practical reforms in his country's sanitation. He is the unopposed candidate, once more in the Liberal interest, for the electoral division of Cagli in the Marches. Milan, moreover, will in every probability return two medical candidates—Dr. Gnocchi-Viani and (all but certainly) Dr. Malachi De Cristoforis, whose efforts to rehabilitate the hygienic conditions of the Lombard capital have been so far successful as, for one thing, to have almost stamped out small-pox by rigorous vaccination and re-vaccination, and who, if adequately supported, would long ago have endowed it with the blessing it sorely needs—a pure and abundant water-supply. The former seeks election as a Socialist and the latter as an advanced Liberal. The University of Modena sends as Liberal candidate for the first electoral division of Pistoia its Professor of Balneology and Hydrology, Dr. Paolo Cascisni, whose connexion with the thermal establishment of Monte Catini is widely known through treatises reviewed in THE LANCET, and whose efforts in Parliament to develop Italy's resources in such health resorts are among the grounds on which he appeals for the suffrages of the Pistoiesi. Medico-psychology contributes an able publicist in Professor Silvio Venturi; and criminal anthropology a redoubted advocate of root-and-branch educational reform in Professor Napoleone Colajanni, the former contesting Cologna Veneta, in the province of Verona, the latter Castrogiovanni in Sicily. Both these candidates, if returned, will have the coöperation in Parliament of Professor Enrico Ferri of the Roman school, who, by profession a jurist, is so far medically equipped as to make him Professor Lombroso's henchman at anthropological congresses and also at criminal trials, civil and military. He stands for several constituencies and is more than likely to be returned as many times over. Naples has at least one of its professional staff in the field—Dr. Francesco Fede, who holds the chair of Pathology and Clinical Medicine in the University, and who seeks re-election for Riccia (Campobasso). Rome, as might be expected, sends forth many candidates from its school—the Commendatore Gaetano Semeraro, its Rector Magnificus, who contests Castellaneta (province of Lecce);

Dr. Felice Santini, of the Navy Medical Staff, and Dr. Guido Baccelli, Professor of Clinical Medicine in the University Institute and perpetual President of the Accademia di Medicina. He has a Socialist barrister as an opponent for the third electoral division; but all the omens point to his success. He was entertained at a banquet the other day by his committee, and as his speech on the occasion was one of the most memorable evoked by the electoral struggle now in progress I may refer to some of its more interesting passages. Dwelling on the *Esercito e Scuole* (army and schools) he showed how, under the Continental system, the army is efficient in proportion to the intelligence or education of its constituents, and echoed the saying of Mommsen that Germany won her triumphs in 1870–71 by her universities. "The army is the reflection of the people, and the people must be educated in a military sense from the schools upwards." For this end he always when in office worked hand-in-hand with the War Minister, while as to education itself, whether elementary or academic, his watchword was ever "Thorough." The attainment of this ideal he showed to be Italy's surest means of economy—of lightening those outlays which are her chief source of weakness. As to the universities, again, he has always striven for their absolute autonomy. *L'autonomia universitaria*, he repeated, is the one safeguard against the troubles so recently to be deplored. "Liberty of teaching, liberty of study and research, leading up to examinations conducted stringently and impartially by the State—by this means alone will the public be guaranteed a duly qualified medical man, lawyer, or engineer." Some of his professional illustrations were happy, as when he described the European Governments as agitated by "insomnia due to political hyperæsthesia," while that of Italy under the present control was "anæsthetised." His arguments in favour of decentralisation were felicitously drawn from the inter dependence of stomach, liver, heart, and brain, and at one episode of his review of society he hit the blot and its sequelæ by a reference to "sloughing phagedæna." His audience, largely medical out of a total of 375, enjoyed the apt similitudes, as also the frequent citations, none of them hackneyed but all the more effective, from the Latin poets. The whole speech, from its intellectual breadth, its impartiality, its admirable good temper, and its literary polish, has been widely commented on by political organs of every shade and certainly bears out the remark I began by quoting from Lord Malmesbury that the medical contrasts not unfavourably with any sister profession for the sagacity and even-mindedness it brings to bear on the politics of the day.

March 21st.

Obituary.

WILLIAM BOYD, J.P., M.R.C.S. ENG., L.S.A.

MR WILLIAM BOYD, whose death at Durham on March 9th we have already recorded, was one of the best known and most highly respected inhabitants of the city. He was a native of Durham, having been born in the parish of St. Nicholas in 1817, a few years after his father had come from Merrington to fill an important position in a woollen factory. Mr. Boyd received a good education at two of the local schools, and having resolved to enter the medical profession he was taken as an apprentice by two surgeons practising in the city, Mr. William Clifton and Mr. George Shaw. Under these gentlemen he was well grounded in the details of a practitioner's daily routine, and he eventually proceeded to London, where he attended University College Hospital for a time, and took the qualifications of a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1842. He then returned to Durham, occupying a house in Leazes-place, and soon acquired a large practice, to which he devoted his best energies for more than fifty years. Mr. Boyd also held numerous public appointments, the duties of which he discharged with exemplary assiduity. He was for a long time medical officer to the workhouse. He was, moreover, the public vaccinator; and on the death of Mr. Shaw in 1871 he was elected surgeon to Durham County Prison, a post which he retained until the management of all the prisons in the country was taken over by the Government. He was also medical officer of health for the parishes of St. Nicholas and St. Oswald. Mr. Boyd possessed considerable business capacity, extensive general information, and much intellectual power. He was a man of few words, and took little account of class distinctions in his demeanour towards his patients, displaying similar courtesy to rich and poor alike. In the municipal life of Durham Mr. Boyd played a large part, his connexion with it being of such duration that of late years he was the "father of the corporation," having outlived all those with whom he was associated on his first entering into public life. He was councillor for the North Ward from 1849 to 1859, when he retired on being elected alderman, to which more important office he was always re-elected without opposition until his resignation a few years ago on account of failing health. Mr. Boyd's high place in the estimation of his fellow townsmen is sufficiently shown by the fact that he was elected to the mayoralty on four occasions—namely, in the years 1857, 1860, 1865, and 1888. During his first term of office he had the duty of presenting an address to the Queen on the occasion of the marriage of the Princess Royal. In 1890 the corporation conferred on him the honorary freedom of the city, and requested his acceptance of the oil painting of himself which now hangs in the Town Hall. Mr. Boyd has left a widow and a son. The funeral took place on March 13th at St. Nicholas' Cemetery in presence of a large company of mourners.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates passed in March in the under-mentioned subjects:—

Surgery—E. C. Bailey, King's College; G. E. Brooke, Cambridge and London; R. Holt, Royal College of Surgeons in Ireland; G. F. May, McGill University; J. Ponsonby, Guy's Hospital; L. W. Seymour, St. George's Hospital; and A. Stein, Middlesex Hospital.

Medicine, Forensic Medicine, and Midwifery.—H. M. Church, McGill University; J. F. Fox, Cork and Westminster Hospital; F. T. Knott, London Hospital; and W. L. G. Morgan, St. Thomas's Hospital.

Medicine and Forensic Medicine.—C. H. Church, McGill University; H. Lewkowitsch, Breslau; and M. S. Martin, Calcutta.

Medicine and Midwifery—E. L. C. Muspratt, King's College.

Medicine.—J. Cater, King's College; A. J. Pedley, Birmingham; A. W. Robertson, St. Bartholomew's Hospital; and E. G. Smith, London Hospital.

Forensic Medicine and Midwifery.—W. Mawer, St. Bartholomew's Hospital; and A. R. O'Flahertie, London Hospital.

Forensic Medicine.—E. J. E. Coop, Birmingham and St. Bartholomew's Hospital; and A. M. Weir, Royal Free Hospital.

Midwifery.—C. I. Ellis, Aberdeen and St. Thomas's Hospital; A. Gandier, Toronto; C. G. Schultz, St. Mary's Hospital; and A. Stein, Middlesex Hospital.

The diploma of the society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—Messrs. Brooke, Ellis, Gandier, Morgan, Pedley, Ponsonby, Robertson, Seymour, Smith, and Stein.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. T. Rosenheim, *privat-docent* of Internal Medicine, has been granted the title of Professor.—*Bonn:* Dr. H. Wendelstadt of Cologne has qualified as *privat docent* of Pharmacology.—*Budapest:* Dr. Imrédy, Dr. Tanszk, and Dr. Fodor have qualified as *privat docenten* of Medicine, and Dr. Riegler as *privat docent* of Hygiene.—*Freiburg:* Professor von Kries, who had been offered the chair of Physiology in Berlin in succession to Dr. du Bois Reymond, has decided to remain in Freiburg.—Dr. Ernst Gaupp has been appointed Extraordinary Professor of Embryology.—*Halle:* Dr. H. Reineboth has qualified as *privat-docent* of Internal Medicine.—*Heidelberg:* Dr. Kaiser has been appointed Extraordinary Professor of Physiology.—*Lemberg:* Dr. Ladislaus Szymonowicz of Cracow has been appointed Extraordinary Professor of Histology and Embryology.—*Marburg:* Dr. von Heusinger has been appointed Extraordinary Professor of Forensic Medicine and Dr. Wernicke has been appointed Extraordinary Professor of Hygiene.—*Moscow:* Dr. de Strauch has qualified as *privat-docent* of Gynæcology.—*Munich:* Dr. H. Gudden has qualified as *privat-docent* of Pharmacology.—*Turieff (Dorpat):* Dr. Chirvinski of Moscow has been appointed Professor of Pharmacology and Dietetics, in place of Professor Kobert, who has gone to Görbersdorf.—*Warsaw:* Dr. A. Shcherbak has been appointed Professor of Mental Diseases, and Dr. J. Fedoroff has been appointed Professor of Gynæcology.

THE council of the Midland Branch of the British Dental Association met on March 20th in the Leeds Medical School. The members of the branch resident in that part of the county of Yorkshire also met in the same building, and the company were cordially welcomed by Mr. Scattergood, dean of the medical department of the Yorkshire College.

LINCOLN COUNTY HOSPITAL. — The report presented at the annual meeting of the Lincoln County Hospital showed that the total income during 1896 was £4933 and the expenditure £4814, and the balance due to the treasurer was reduced from £688 to £569. With the view of giving greater security against fire a Merryweather rotary pump was ordered to be provided, and the water service was increased.

BRISTOL EYE HOSPITAL.—The annual meeting of this institution was held, under the presidency of the Mayor, on Feb. 24th. During the past year 4637 new individual out-patients came for treatment, being 300 in excess of 1895, and 379 serious cases were admitted into the wards. The daily attendance of patients at the hospital is about 100. The statement of accounts showed that the income for the year was £1522 and the expenditure £1992, leaving an adverse balance of £470. Dr. Richardson Cross stated that there were 130 towns and villages outside Bristol from which patients had been received, and he hoped the residents of those places would think of the Bristol Eye Hospital when they were considering the claims of medical charities.

THE NEW WORKMEN'S CONVALESCENT HOME IN SUSSEX.—The model convalescent home at Rustington, near Littlehampton, which was fully described in THE LANCET of March 20th, was opened on that date by the Bishop of Chichester. A special train from Victoria brought over 300 guests interested in the scheme, and they were entertained most hospitably by Mr. and Mrs. Henry Harben, the former of whom erected the home and has liberally endowed it. The Bishop laid a memorial-stone and unlocked the door of the home, and after a short service in the hall he declared the institution open. Subsequently at luncheon the toast of Mr. Harben's health was heartily received, and then the company had an opportunity of inspecting the home and its pleasant surroundings. The home is to be conveyed to the Carpenters' Company of London.

BIRKENHEAD MEDICAL SOCIETY.—At a meeting of the above society held on March 19th, Dr. R. Sydney Marsden, President, being in the chair, a discussion on Gastro-enteritis in Children was opened by Mr. G. S. Stansfield, who gave statistics drawn from the experience of Tranmere Workhouse as to the prevalence of this disease and the relative mortality. He also quoted statistics of the comparative mortality in various foundling hospitals with diverse methods of feeding. He pointed out the necessity of correct feeding with regard to material, quantity, and time, and expressed his appreciation of the rules for the feeding of infants drawn up and printed as a leaflet by the Liverpool Children's Infirmary. He entered at some length into the question of the contamination of milk, and concluded by giving an epitome of medicinal treatment. The President, Dr. Pinkerton, Dr. Brien, Mr. Wilkinson, and Dr. Harris took part in the discussion, and Mr. Stansfield replied.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY. — The annual meeting of the Chesterfield and North Derbyshire Hospital and Dispensary was held on March 11th in the Market Hall, Chesterfield, Mr. R. T. Gratton presiding. The report showed that during 1896 there were 312 in-patients admitted, of whom 19 died; there were also 2049 out-patients. The income for the year was £1839 and the expenditure (including £200 transferred to the endowment account) was £1885. None but surgical cases are received in this hospital; space does not permit of medical wards being opened, and it appears that the workhouse hospital is the only institution in the town available for the treatment of medical cases. After various speakers had expressed their views on the subject, it was eventually decided, on the motion of Dr. Rose, that five members of the board of management should meet a like number of representatives appointed by the town for the purpose of discussing the best means of providing for the treatment of medical cases.

NEWTON ABBOT COTTAGE HOSPITAL.—MRS. Allaline Fisher of Abbotsbury, Newton Abbot, who recently died, has left £2000 for the furnishing of Newton Abbot Cottage Hospital. A little time ago Mrs. Fisher gave £5000 towards the building of this institution in memory of her husband.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—At an examination for the Diploma in State Medicine the following candidates have passed with honours: Fredk Alex Craig, M.B.R.U.I., and John Edwin Hancock, M.R.C.S.Eng., L.R.C.P.Lond.

A HOME OF COMFORT FOR THE DYING.—A Home of Comfort for the Dying has been opened at "Dowran," Southsea, in charge of the Winchester Diocesan Deaconesses, for the reception of better-class patients, clergy, missionaries, church workers, nurses, governesses, &c., who are suffering from progressive and incurable disease. Patients, when possible, have to pay towards their support, but payment is not a *sine quâ non*. Application should be made to the Mother Superior, St. Andrew's Home, Portsmouth.

CHELTENHAM GENERAL HOSPITAL.—The annual meeting of this hospital was held on March 17th, under the presidency of Colonel Croker-King. The medical report showed that the number of in-patients was 920 and of out-patients 4844, the latter being an increase of 308 on the year. The average cost of each in-patient was £3 15*s.* 4*d.*, and of each out-patient 3*s.* 3*d.* The cases treated at the branch dispensary were 4033, at an average cost of 2*s.* 5½*d.* The private nursing cases were 263, and the amount received £1038. There was no falling off in the amount of the subscriptions to the hospital. The church collections showed a decrease of £44, and the Hospital Saturday Fund an increase of £17.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—A meeting thoroughly representative of town and county was held at Newport on March 17th to consider the best means of commemorating the Queen's Diamond Jubilee. Lord Tredegar presided, and among those present were the Duke of Beaufort, the Mayor of Newport, and Dr. Garrod Thomas. A resolution was adopted in favour of a joint town and county effort to erect a new hospital, to be located at Newport, the site for which has been given by Lord Tredegar, and towards which an offer of £5000 has been made by Dr. Garrod Thomas conditional on the public subscribing £15,000, or, as an alternative, £1000 for every £3000 subscribed by the public. The meeting was of a most unanimous character and promises of £1045 were given for additions to a fund which previously amounted to £4500.

THE DIFFUSION OF SMALL-POX.—There was no death from small-pox registered in the county of London last week, and the cases admitted to the hospital ships at Long Reach were only 2 in number, as against 18, 6, and none in the three preceding weeks. On Saturday last there were 29 patients on the ships, as compared with 43 a fortnight previously. Some concern has lately been felt by the Neath urban district council by reason of the fact that small-pox has appeared in a gipsy camp in the neighbourhood, the members of the camp persisting in roaming about. Small-pox has broken out in a Cardiff hotel, four cases having been removed to the borough sanatorium. Re-vaccination has been performed at the hotel among the servants and others, and all other precautionary measures have been adopted.

TORBAY HOSPITAL, TORQUAY.—The annual meeting of this hospital was held recently at Torquay under the presidency of Mr. W. Kitson, J.P. The report showed that 330 in-patients had been admitted in 1896, against 342 in 1895. 497 minor accidents and emergencies had been treated, 60 in-patients and 442 out-patients were treated by the honorary ophthalmic surgeon, and 509 dental cases were treated by the honorary dental surgeon. The provident dispensary, which has been placed upon an entirely fresh basis, had 1156 patients on Dec. 31st, 1896. The treasurer's statement showed the institution to be in debt on the revenue account to the extent of £135, although the year commenced with a favourable balance of £3, thus making the excess of expenditure over receipts for the year £138. This unfavourable balance has been fortunately removed by a ball recently given by the Mayor and Mayoress of Torquay.

MR. T. W. MORGAN, D.Sc., of Messrs. W. E. Lowe and Co., chemists, 8, Stafford-street, Old Bond-street, W., asks us to intimate to the members of the medical profession that he is not the Dr. Morgan mentioned in the case of Bull *v.* Morgan.

MEDICAL MAGISTRATES.—The Lord Chancellor, on the recommendation of the Lord-Lieutenant, has placed the name of James Grey Glover, M.D. Edin., of Highbury-place, on the Commission of the Peace for the County of London.—Mr. Thomas Moreton, M.R.C.S. Eng., of Hartford, Northwich, has been placed on the Commission of the Peace for Cheshire.

GENEROSITY.—A letter has been received at the Nottingham General Hospital from Mr. Ernest T. Hooley in which he offers that whatever the Hospital Saturday Committee between now and "Queen's Commemoration Day" (June 22nd next) collect throughout the district participating in the benefits of the hospital, up to 200,000 shillings, he will supplement by an equal amount, the whole to be applied to the fund for the much-needed extension of the hospital, and to be styled "The Hospital Saturday Victoria Fund."

FOOTBALL CASUALTIES.—In a match played at Bedminster, Bristol, between Bedminster and Trowbridge Town, on the 17th inst., a member of the latter team sustained a fracture of his clavicle.—On the same day, during a match at Brighton, a player, the centre half, dislocated his left humerus.—On Saturday last, in a match, Shipley against Luddendenfoot, at Shipley, the Shipley centre three-quarter received a serious injury to one of his eyes, and was at once taken to the Bradford Eye and Ear Hospital, and remained a patient.

DIPHTHERIA IN LONDON.—The fatal cases of diphtheria in London during last week amounted to a total of 37, these deaths being only 1 in advance of the corrected decennial average of deaths from diphtheria in London in the eleventh week of the period 1887–96. This total showed a decided fall from the numbers of the preceding three weeks, which had been 62, 43, and 53 respectively. Only 2 of the deaths were of persons aged upwards of twenty years, whilst 2 were of infants under one year of age. Lambeth and Wandsworth were each credited with 5 of the deaths, and Hackney and Bethnal Green each with 4 deaths; these four sanitary areas therefore accounted for almost one-half of the deaths in the week in the whole county of London. The admissions to hospital during the week numbered 113, as compared with 102, 112, and 97 in the three weeks immediately preceding, 829 patients suffering from the disease remaining under treatment on Saturday last. In the Outer Ring of the metropolis there were as many as 17 deaths registered from diphtheria last week, 3 being in the Edmonton registration district and 5 in the West Ham registration district.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Public Health (Scotland) Bill.

ON Monday, March 22nd, a further attempt was made to get the Public Health (Scotland) Bill through the second reading stage, but, like previous attempts, this one failed. Several Scotch Members made speeches criticising the measure.

General Medical Council Accounts.

The accounts of the General Medical Council and the branch councils for the year ending Dec. 31st last were laid before the two Houses of Parliament this week.

HOUSE OF COMMONS.

THURSDAY, MARCH 18TH.

Beri-Beri in an Irish Asylum.

Mr. Carew asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the present alarming condition of the Richmond Lunatic Asylum in Dublin; whether he was aware that, with accommodation available for only 1000 patients, 1714 were housed there in October last, and that in consequence of this overcrowding beri-beri, a loathsome disease hitherto confined to the densely populated and filthy quarters of Chinese and other Eastern cities, has appeared, and of 113 patients attacked last year seven died up to December last; would he explain why, notwithstanding the repeated protests of two of the members of the Board of Control against overcrowding, no practical steps had been taken by that body to stamp out the disease; and whether, in the circumstances, the Government would see that immediate precautions were taken to prevent its spreading.—Mr. Gerald Balfour replied that the Irish Government had been giving close and constant attention to the accommodation at the Richmond District Asylum and to the outbreak of beri-beri there. The number of patients on the asylum register at the end of 1896 was 1728, of whom 59 were at Portrane. The present accommodation of the Richmond Asylum was for 1393 patients, in addition to which provision had been made for 80 patients at Portrane and for 40 in the residence of the resident medical superintendent (surrendered for that purpose), thus bringing up the present accommodation to 1518. Further temporary accommodation for 220 patients was now being provided at Portrane. The number of deaths from beri-beri at Richmond during 1896 was 8, as against 123 deaths from various other causes. He might observe that the general death-rates in this asylum for 1895 and 1896 were the lowest recorded since the opening of the asylum. In 1895 the percentage of deaths from all causes was only 7·1 and in 1896 7·3, and comparing these rates with the death-rates in the principal English asylums during 1896 he found that, with two exceptions, the rates in the English asylums were much higher than at Richmond. Every effort had been, and was being, made by the Board of Control to stamp out the disease known as beri-beri and to provide adequate accommodation for the patients.

Meat-supply for the Army.

Mr. Powell Williams, answering a question put to him by Mr. Flavin, said that two officers of the War Department, one of them belonging to the Army Service Corps, had visited Ireland in reference to the question of the meat supply to the troops and they were now pursuing their inquiries in other parts of the kingdom.

MONDAY, MARCH 22ND.

Poor-law Officers' Superannuation.

Mr. Ashton asked the President of the Local Government Board whether the information in the possession of the Local Government Board showed that the contributions from salaries of Poor-law officers under the Poor-law Officers' Superannuation Act, 1896, would suffice, or almost suffice, to pay the pensions under the Act; whether his attention had been called to the calculations made by Mr. Thomas Fatkin, an expert, at the request of the Leeds Board of Guardians, and adopted by them on Jan. 13th last, which calculations showed that the contributions of the officers would barely suffice to pay one-third of the cost of the pensions under the Act; and whether, having regard to the fact that a Bill was before the House to extend the provisions of the Act to the officers and servants of other local authorities, he would consider the advisability of having actuarial calculations made out to determine what proportion of the cost of the pensions was likely to fall on the ratepayers in the event of the Bill becoming law.—Mr. T. W. Russell replied to the question, saying that the Local Government Board had no definite information as to how far the contributions from salaries of Poor-law officers under the Poor-law Officers' Superannuation Act would suffice to pay the allowances under the Act; but it had to be borne in mind that in the great majority of cases of officers to which the Act referred the guardians prior to the passing of the Act were empowered to award superannuations without any contributions from the officers. The Act had conferred upon the officers the right to a superannuation—instead of its being optional with the guardians to grant superannuation, as was previously the case—as regards all officers who devoted their whole time to their duties, it being at the same time made obligatory on the officers to whom the Act applied to contribute a percentage of their salaries towards the cost of superannuation. The Local Government Board had seen the communication which Mr. Fatkin had addressed to the Leeds board of guardians, but they could not undertake to have made the actuarial calculations suggested in the last question, and looking to the thousands of authorities to which the Bill referred the Local Government Board did not think there were any data on which any actuarial calculations which could be relied upon could be made.

The London Water Question.

Sir Frederick Dixon-Hartland asked the President of the Local Government Board whether he had seen that since the decision of the House was given against the London County Council acquiring the control of the water supply of London the council had instructed its engineer to proceed with the plans and sections of the Wye portion of the Welsh scheme, at a cost of £1,500; and whether any and what steps could be taken to prevent this expenditure of the ratepayers' money, and if the parties promoting the scheme could be surcharged by the Government or other auditor.—Mr. Chaplin said he had ascertained that the London County Council had, subject to the passing of the annual maintenance vote, assented to the expenditure referred to in the question, and that the expenditure was considered to be authorised by Section 3 of the London Water Act, 1892. The Local Government Board had no authority to intervene to prevent the expenditure; it would, of course, devolve on the district auditor in the case of the payments referred to, as in the case of any other payments by the County Council, to consider whether the expenditure had been legally incurred.

Dangerous Performances.

At this sitting Mr. Jesse Collings introduced a Bill to extend the age under which the employment of young persons in dangerous performances is prohibited. The Bill raises the age of prohibition from fourteen to eighteen years.

TUESDAY, MARCH 23RD.

Experiments on Living Animals.

Mr. MacNeill asked the Secretary of State for the Home Department whether the inspectors appointed for the purpose of securing a compliance with the provisions of 39 and 40 Vict., c. 97, to visit places licensed for the practice of vivisection, had hitherto been persons who either had practised vivisection in the past, or shown the strongest sympathy with the practice of vivisection; were there any of those inspectors who were opposed to the practice of vivisection; and whether he would consider the advisability of not confining the inspection of licensed places for vivisection to inspectors who were advocates of the system?—Sir Matthew White Ridley replied that the inspectors had been appointed by his predecessors without regard to their advocacy of or opposition to the

system established by statute under which experiments might be performed on living animals. If occasion arose he should pursue the same policy. The scientific knowledge required in an inspector implied a knowledge of experiments on animals, and he was satisfied that the inspection was carried out with the strictest regard to the law and to considerations of humanity.—Mr. MacNeill asked the right hon. gentleman to say whether all these inspectors were advocates of vivisection, because he was told they were.—Sir Matthew White Ridley said he had told the hon. member that they were all acquainted with the most humane method of conducting these experiments. He was not able to say whether they were advocates of the law as it stood or whether they desired any change in it, but he was persuaded that they could not see whether operations were conducted according to law unless they employed professional gentlemen who knew something about the matter.—Mr. MacNeill then asked the right hon. gentleman whether his attention had been directed to the account in the press of a soirée to which 400 guests were invited in honour of the completion of the new laboratories in connexion with St. George's Hospital Medical School, the report stating that in the physiological laboratory were displayed illustrations of new methods employed in the serum diagnosis of cholera and diphtheria; and whether St. George's Hospital had a licensed laboratory for the performance of experiments on the bodies of living animals; and, if so, why had not this hospital been included in the last return of places licensed for vivisection.—Sir Matthew White Ridley replied that he had seen a newspaper account of the reception referred to, but he did not gather from it that anything illegal took place. There was no licensed laboratory at St. George's Hospital.

Metropolitan Poor-law Children.

Mr. Bemrose asked the President of the Local Government Board, with reference to the proposed order for a new sick children's board, how many replies had been received from boards of guardians and managers, and how many of these expressed approval of the order as it stood.—Mr. Chaplin replied that since the date of the Conference he had received communications from seven boards of guardians out of thirty and two school districts out of six. Three out of the seven boards of guardians either approved the draft order or suggested as an alternative that the Metropolitan Asylums Board should take charge of the cases; one board preferred the Metropolitan Asylums Board if there was to be any change at all to which it was opposed; another suggested that the classes referred to should be assigned to some school or group of schools, and the remaining two objected. Of the two school districts, one approved and the other objected.

BOOKS, ETC., RECEIVED.

ABBOTT, JONES, AND CO., Adam-street, Strand, London.
The Narrative of my Experience as a Volunteer Nurse in the Franco-German War of 1870-71. By Anne Thacker. With a Sketch of her Life by James M. Menzies, M.A. 1897. Price 3s. 6d.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Physiology: Students' Note-book for the Laboratory. Part I., Physiological Chemistry. By A. J. Hall, B.A., M.B. Cantab., M.R.C.P. Lond. 1897. Price 2s. 6d. net.

BARNTRARGER, G., Berlin.
Allgemeine Dermatologie. Von Dr. Ernst Kromayer. 1896.

BAUERMEISTER, M., West Nile-street, Glasgow.
Die Epithelfrage bei Cestoden und Trematoden. Von F. Blochmann. Mit 2 Tafeln. 1896.

BERGMANN, J. F., Wiesbaden.
Die Meningitis Serosa Acuta. Von Dr. G. Baenninghaus. 1897.
Ergebnisse der Allgemeinen Pathologie und Pathologischen Anatomie des Menschen und der Tiere. Von O. Lubarsch und R. Ostertag. Zweiter Jahrgang, 1895-1897.
Handbuch der Gynäkologie. Von J. Veit. 1897.
Winke zur Diagnose der Peripheren und Centralen Nervenkrankheiten mit Hülfe der wichtigsten Ophthalmologischen Untersuchungsmethoden. Von C. A. Oliver, A.M., M.D., und Dr. J. Wolff. 1897.

CHURCHILL, J. AND A., Great Marlborough-street, London.
A Manual of Chemistry, Theoretical and Practical. By W. A. Tilden, D.Sc., F.R.S. 1897. Price 10s.

CONSTABLE, T. AND A., Edinburgh.
Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., F.R.S. Edin. Vol. III. Part 3. 1897.

DORNAN, W. J., Philadelphia.
Transactions of the American Surgical Association. Vol. XIV. 1896.

FANNIN AND CO., Grafton-street, Dublin.
Transactions of the Royal Academy of Medicine in Ireland. Vol. XIV. 1896.

FERET ET FILS, Bordeaux.
Chirurgie des Voies Urinaires. Études Cliniques. Par le Dr. E. Loumeau. Vol. II. 1897.

IDEAL PUBLISHING UNION, 112, Fleet-street, London, E.C.
The Ethics of Diet. By H. Williams, M.A. Revised and Enlarged Edition. 1896.

LEWIS, H. K., Gower-street, London, W.C.
Medical Nursing. By the late Jas. Anderson, M.D., F.R.C.P. Edited by E. F. Lamport, with a Biographical Notice by Sir Andrew Clark, Bart. Third Edition. 1897. Price 2s. 6d.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Vita Medica: Chapters of Medical Life and Work. By Sir B. Ward Richardson, M.D., LL.D., F.R.S. 1897. Price 16s.
The Annual Charities Register and Digest. By C. S. Lock. 1897. Price 4s. net.

MASSON ET CIE, Paris.
Revue de Gynécologie. Tome 1, No. 1, Janvier-Février, 1897. Par S. Pozzi.

PENTLAND, Y. J., Edinburgh and London.
A Treatise on Obstetrics. By Edward P. Davis, A.M., M.D. Illustrated. 1897.
A Treatise on Surgery by American Authors. Edited by R. Park, A.M., M.D. Vol. I., General Surgery. Vol. II., Special or Regional Surgery. Illustrated. 1897.

PESTI KÖNYVNYOMDA-RÉSZVÉNYTARSASAG, Budapest.
Huitième Congrès International d'Hygiène et de Démographie tenu à Budapest du 1 au 9 Septembre, 1894. Vols. I. to VII. With Appendix. 1896.

PUBLISHED BY THE ASSOCIATION, Philadelphia.
Transactions of the American Orthopædic Association. Tenth Session, held at Buffalo, N.Y., May, 1896. Vol. IX. 1896.

REBMAN PUBLISHING COMPANY, Adam-street, Strand, London.
A Pictorial Atlas of Skin Diseases. Edited by J. J. Pringle, M.B., F.R.C.S. Part 8. 1897. Price 10s. 6d.
A Text-book of Materia Medica, Therapeutics, and Pharmacology. By G. F. Butler, Ph.G., M.D. 1897. Price 22s. 6d.

SAMPSON LOW, MARSTON, AND COMPANY, Fetter-lane, Fleet-street, London.
Twentieth Century Practice. Edited by T. L. Stedman, M.D. In twenty volumes. Vol. VIII., Diseases of the Digestive Organs. 1897.

SAUNDERS, W. B., Walnut-street, Philadelphia.
The Pathology and Surgical Treatment of Tumours. By A. Senn, M.D., Ph.D., LL.D. Illustrated. 1895.

SCIENTIFIC PRESS, Southampton-street, Strand, London, W.C.
Practical Hints on District Nursing. By Amy Hughes. 1897. Price 1s.

SCOTT, WALTER, Paternoster-square, London.
Hypnotism. By Albert Moll. Fourth Edition. 1897. Price 3s. 6d.

STENHOUSE, A., Hillhead, Glasgow.
Forensic Medicine and Toxicology: a Manual for Students. By C. O. Hawthorne, M.B. Second Edition. 1897. Price 4s. 6d. net.

UNIVERSITY PRESS, John-street, Bedford-row, London, W.C.
Pseudo-philosophy at the End of the Nineteenth Century. By H. M. Cecil. I., An Irrationalist Trio—Kidd, Drummond, Balfour. 1897. Price 10s.

Sight-testing for the G.P., a Manual for the General Practitioner: by F. Davidson, Optician (A. La Riviere, Clifton-street, Finsbury, London, E.C.); price 2s. 6d.—A Collection of Ballads: edited by Andrew Lang; illustrated (Chapman and Hall, 11, Henrietta-street, Covent-garden, London, W.C., 1897); cloth, price 2s.—Liverpool Royal Infirmary Medical Report, 1895.—Epidemiologia, el Cólera en la Republica Argentina: por el Dr. José Penna (Jacobo Penser, Buenos Aires, 1897).—Przeglad Chirurgiczny: von Dr. W. H. Krajewski; tom. III.; zeszyt 3 (Druk. K. Kowalewskiego, Warszawa, 1897). — Magazines, &c., for April: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Sunday Hours, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, and English Illustrated Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

ADAMS, JOSEPH, M.B., C.M., Edin., has been re-appointed Medical Officer of Health by the Runcorn Rural District Council.

BERRY, FREDERICK CHARLES, B.A., M.D., B.Ch. Dubl., has been re-appointed Medical Officer of Health for Burnham, Somerset.

BEVAN, R., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed Medical Officer of Health for the Ashford Urban Sanitary District.

COLLINS, H. A., M.R.C.S., has been appointed Medical Officer for the Saxmundham Sanitary District of the Plomesgate Union.

CONOLLY, C. H., M.R.C.S., has been re-appointed Medical Officer of Health for the Urban District of Wood-green, N.

CORBEN, CHAS., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Caldecott Sanitary District of the Chepstow Union.

CROOKS, JAMES, M.D. & C.M. Trin. Toronto, L.R.C.S. Edin., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Eighth District of the Lexden and Winstree Union and the Seventh District of the Sudbury Union, vice H. D. Palmer, resigned.

DAVEY, E. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Dover Union.

DAY, T. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Harlow Sanitary District of the Epping Union.

FLOYD, STEPHEN, M.D., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for the Llandrindod Wells Urban District Council, vice F. H. Roberts.

GRAHAM, J. G., M.B., C.M. Edin., has been appointed Assistant Medical Officer for the Smithson Poorhouse and Asylum by the Greenock Parish Council.

HARPER, J. R., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Second Sanitary District of the Barnstaple Union.

HARRIS, L. H. L., M.B., Ch.M. Syd., has been appointed a Resident Medical Officer to the Sydney Hospital, New South Wales.

HAWORTH, F. G., M.B., C.M. Glasg., L.R.C.S. Edin., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Urban Sanitary District of Darwen.

HITCHINS, CHARLES VERNON, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for the Weston-super-Mare Urban District.

IREDALE, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Mablethorpe Urban District Council.

JEFFERY, C., M.B., C.M. Aberd., has been appointed Medical Officer for the Altofts Sanitary District of the Wakefield Union.

JOHNSTONE, JOHN PIERCE, L.R.C.P., L.R.C.S., L.M. Edin., has been appointed Medical Officer for the First Sanitary District of the Langport Union.

LANGDON, T. C., F.R.C.S. Eng., has been re-appointed Medical Officer of Health by the Winchester Town Council.

LANGLEY, W. H., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Attendant to the Ordnance Survey Barrack, Phœnix Park, Dublin, and to the Morgan School, Castleknock.

LORIMER, J. A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Rural Sanitary District of Farnham.

MACKINNON, CHARLES, M.A., M.B., C.M. Glasg., has been re-appointed Medical Officer of the Southern District of the Cirencester Union.

MANBY, E. P., B.A., M.D., D.P.H. Camb., has been appointed Assistant Lecturer on Public Health in University College, Liverpool.

MASON, WM., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the St. Austell Urban District Council.

NEECH, JAMES T., L.R.C.P. Edin., D.S.Sc. Vict., has been re-appointed Medical Officer of Health by the Atherton Urban District Council.

O'CONNER, G. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Fourth Sanitary District of the North Witchford Union.

PARTRIDGE, T., M.R.C.P. Irel., M.R.C.S., has been appointed Medical Officer of Health by the Nailsworth Urban District Council.

PICKEN, JAS., M.B., C.M. Glasg., has been re-appointed Medical Officer of Health for the Rawmarsh Urban Sanitary District.

PICKERING, HAROLD J., L.D.S. R.C.S. Eng., has been appointed Dental Surgeon to the Felstead School, Essex.

POLLARD, J. E. L., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Fourth Sanitary District of the Dover Union.

PRICE, G. BASIL, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the London Temperance Hospital, Hampstead-road, N.W.

RICHARDS, JOHN, M.B. Edin., has been appointed Assistant Medical Officer to the Derby Borough Asylum.

SHARP, EDWARD, J.P., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for the Truro Urban District.

STOHO, ROBERT, M.B., C.M. Glasg., has been appointed Medical Officer of Health by the Sunderland Rural District Council.

SUTTIE, D., M.D., C.M. Edin., has been appointed Medical Officer for the Birsay, Harray, and Sandwick Sanitary District.

SWENDEN, B. W., L.R.C.P. Lond., M.R.C.S., has been appointed a House Surgeon to the Boscombe Hospital and Provident Dispensary.

THROUALD, A. J. A., M.B., B.Ch. Edin., has been appointed Medical Officer for the Reading and Wokingham District School.

THOMAS, JOS. T., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer by the Camborne Urban District Council.

VOELCHER, AUGUSTUS, has been re-appointed a District Analyst under the Fertilisers and Feeding-stuffs Act, 1893, by the Berkshire County Council.

WALLACE, J. J., M.B., B.Ch. Irel., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Workhouse and the Weobley Sanitary District of the Weobley Union.

WEIR, A. M., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Malvern Link District Council.

WILLIAMS, C. R., M.B., C.M. Edin., has been appointed Medical Officer by the Ashby-de-la-Zouch District Council.

WOOD, JOHN, M.B. Oxon., L.R.C.S. Edin., has been re-appointed Medical Officer for the Walsall Rural Sanitary District.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHLEM HOSPITAL.—Two Resident Clinical Assistants for six months. Apartments, complete board, and washing provided.

BIRKENHEAD UNION.—Assistant Medical Officer for one year, for the Infirmary, Workhouse and Schools. Salary £80 per annum, with board, washing, and apartments. Applications to the Clerk to the Guardians, Clerk's Offices, 45, Hamilton-square, Birkenhead.

BRISTOL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £100 per annum, with rooms and attendance (not board).

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £100 a year with board and lodging.

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Board, lodging, and washing in hospital provided.

HOSPITAL FOR DISEASES OF THE THROAT, Golden square, London, W.—Junior Resident Medical Officer for six months. Salary at the rate of £25 per annum, with board, lodging, and washing.

LONDON COUNTY ASYLUM, Hanwell.—Fifth Assistant Medical Officer. Salary £120 per annum, rising by £5 a year to £150, with board, furnished apartments, and washing. Applications to the Clerk of the Asylums Committee, Office, 21, Whitehall-place, London, S.W.

MANCHESTER ROYAL EYE HOSPITAL.—House Surgeon. Salary £70 per annum, with residence, board, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon.

MONTROSE ROYAL LUNATIC ASYLUM.—Medical Superintendent. Salary £700 per annum, with free house, fire, and light. The appointment is an annual one.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, London.—Senior House Physician. Salary £100, with board and apartments.

ROXBURGH DISTRICT ASYLUM, Melrose.—Assistant Medical Officer. Salary £100 a year, with board, rooms, attendance, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £50 per annum, with board and lodging.

SWANSEA GENERAL HOSPITAL.—House Physician for one year. Salary £50 per annum, with board, apartments, laundress, and attendance.

UNIVERSITY COLLEGE, London.—Assistant Ophthalmic Surgeon.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, CARDIFF, MEDICAL SCHOOL.—Demonstrator in Physiology for the Summer Session.

VICTORIA HOSPITAL, Folkestone.—House Surgeon and Dispenser. Salary £80 per annum, rising to £100.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary attached to the hospital. Salary £80 per annum, with board, lodging, and washing.

WOLVERHAMPTON EYE INFIRMARY.—House Surgeon, for six months. Salary at the rate of £70 per annum, with rooms, board, and washing.

WONFORD HOUSE HOSPITAL FOR THE INSANE, near Exeter.—Assistant Medical Officer. Salary £150 per annum, with furnished apartments, board, and washing.

Births, Marriages, and Deaths.

BIRTHS.

EVANS.—On March 17th, at Kirkley Rise, Lowestoft, the wife of H. Muir Evans, M.D., of a daughter.

GERVIS.—On March 20th, at Bishop's Stortford, the wife of Henry Gervis, M.B., of a son.

MARRIAGES.

GASTER—MOCATTA.—On March 23rd, at the Spanish and Portuguese Synagogue, Lauderdale-road, Maida-vale, Leah, youngest daughter of Abraham Mocatta, of Inverness-terrace, W., to Anghel Gaster, M.D., M.R.C.P., son of Chevalier A. E. Gaster, of Bucharest.

HARVEY—STURDY.—On March 20th, at Christ Church, St. Leonards-on-Sea, Frederic Harvey, L.S.A., eldest son of Major Harvey, late of H.M.'s 90th Light Infantry, Bexhill, Sussex, to Grace Madoline, third daughter of Mr. Sturdy, of Warrior-gardens, St Leonards-on-Sea.

RAY—WYCKOFF.—On March 18th, at St. Stephen's, South Kensington, Walter John Orbell, M.R.C.S., L.R.C.P. Lond., elder son of the late Walter Ray, of Tostock, Suffolk, and Ventnor, I. of W., to Marie Estelle (Stella), elder daughter of W. S. Wyckoff, of New York.

DEATHS.

DYER.—On March 14th, at the Hotel Victoria, Piza, John Edward Dyer, Sen., M.R.C.S., L.R.C.P., of South Africa.

HAMMOND.—On March 22nd, at 54, Folkestone-road, Dover, George Hammond, M.R.C.S., L.S.A., formerly of Irthlingborough, Northamptonshire, aged 75.

HENNING.—On March 16th, at Tunbridge Wells, Richard Skinner Henning, M.R.C.S., in his 84th year.

KEIR.—On March 24th, at Glen Lynn, West Norwood, Adam Keir, M.D., late of H.E.I.C.S., Bengal Army, aged 88 years, eight months.

MACCLINTON.—On March 22nd, at Lansdowne-road, W., William Forrest MacClinton, B.A., M.B., Deputy-Inspector-General, R.N., in his 74th year.

PARSONS.—On March 17th, at Paddock House, Wimbledon, Thomas Edward Parsons, Surgeon, aged 52.

VINE.—On March 20th, at Henrietta-street, Covent-garden, George John Vine, M.D., F.R.C.S., aged 79.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 25th, 1897.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Dry Bulb	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 19	29·79	N.W.	52	43	98	59	45	...	Fine
,, 20	30·10	N.W.	49	45	78	59	45	..	Cloudy
,, 21	30·11	W.	54	52	79	61	49	0·11	Cloudy
,, 22	30·04	S.W.	53	52	80	59	51	...	Raining
,, 23	29·96	WNW	50	48	112	64	47	...	Cloudy
,, 24	29·77	W.	54	50	95	61	49	...	Cloudy
,, 25	30·01	S.W.	51	48	101	60	47	...	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.)

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

THURSDAY (1st).—HARVEIAN SOCIETY.—Mr. G. B. Browne: Is it ever impossible to pass a Catheter through the Urethra into the Bladder?

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (29th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Dr. J. Priestley: Ventilation, Warming, and Lighting.

TUESDAY (30th).—ROYAL COLLEGE OF PHYSICIANS—5 P.M. Dr. A. P. Luff: The Chemistry and Pathology of Gout. (Goulstonian Lecture.)

LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: Puerperal, Lactational, and Climacteric Insanities.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. Payne: Erythema.

ROYAL INSTITUTION.—3 P.M. Prof. A. D. Waller: Animal Electricity.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4 P.M. Dr. D. Grant: Cases of Affections of the Throat and Ear associated with Diseases of the Nervous System.

WEDNESDAY (31st).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—2 P.M. Mr. A. Taylor (conducted by): Inspection and Demonstration in the Parish of St. George's, Hanover-square (number limited).

LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-street, W., 4.30 P.M., Prof. A. Wynter Blyth: Infectious Diseases.

THURSDAY (1st).—ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. H. C. Bastian: Some Problems in Connexion with Aphasia and other Speech Defects. (Lumleian Lecture.)

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Mr. J. W. Pegge: Principles of Calculating Areas, Cubic Space, &c.; Interpretation of Plans and Sections to Scale.

ROYAL INSTITUTION.—3 P.M. Prof. W. B. Dawkins: The Relation of Geology to History.

FRIDAY (2nd).—ROYAL INSTITUTION.—9 P.M. Mr. C. T. Heycock: Metallic Alloys and the Theory of Solution.

LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Erysipelas and Suppuration.

SATURDAY (3rd).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—3 P.M. Inspection and Demonstration at Aylesbury Dairy Co.'s Premises, Bayswater (number limited).

ROYAL INSTITUTION.—3 P.M. Right Hon. Lord Rayleigh: Electricity and Electrical Vibrations.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index for the second volume of 1896 was given in the issue of Dec. 26th last. The practice of supplying loose copies has been discontinued, the Index having been placed in the centre of the journal, whence it can easily be detached, and placed either at the beginning or at the end of the volume.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1896 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.* (Local bookbinders will charge about 1*s.* for binding the numbers in these cases.)

To be obtained on application to the Manager, accompanied by remittance.

THE YARROW CONVALESCENT HOME FOR CHILDREN.

OUR readers will remember the munificence with which Mr. Yarrow founded and endowed a delightful convalescent home at Broadstairs for children in 1895. The report for seventeen months of work done is before us and is highly satisfactory. The home is founded for the benefit of children of respectable parents with limited means and confronted with exceptional circumstances of sickness, implying the need of change and sea air for convalescence. Such circumstances often greatly embarrass those who under all ordinary circumstances live quite independently. A table is given of the position or occupation of the parents. The predominant numbers are those of clerks in banking, insurance, and commercial houses, but nearly all classes are included in Mr. Yarrow's beneficence. He does the duty of entertaining convalescents in a complete sort of way, heading his report with an unwonted line in such documents, "No subscriptions are required for this institution, which is fully endowed." All he asks from the profession and the public is to send him fit cases of the class whose benefit he contemplates. We congratulate Mr. Yarrow on having relieved in seventeen months 661 children, 114 of whom were children of widows, or orphans. His action, like that of Sir Blundell Maple, shows that when "wealth accumulates" men do not necessarily "decay."

"A SUCCESSFUL SOCIETY!!"

MRS. THEODORE MONRO, the hon. secretary of the London Anti-Vivisection Society, writes to us under date March 18th, and asks us to inform her how her society is to proceed so as to obtain a conviction of "vivisectors" for "cutting up animals alive" without anæsthetics, and maintaining that it is legal to cut up animals alive under these circumstances. She also says that in the return printed on August 6th last some 3000 experiments were down as having been made without anæsthetics. No doubt there were, but the animals were not "cut up alive" any more than babies who are vaccinated are cut up alive. If Mrs. Monro will look at the *Times* of March 14th and study the Home Secretary's reply to Mr. MacNeill on that occasion and on March 23rd also, she will learn the nature of the experiments carried out without anæsthetics. We might further remark that anti-vivisection societies might do some good to themselves and gain some respect if they would only take the trouble to verify their references and not make mis-statements, to call them by no stronger name.

A Locum-tenent puts a hard case to us. We think on the whole that he is entitled to be refunded the money he has spent, but he will remember that it is usually as much annoyance to a principal as to a locum-tenent to be disappointed in such engagements. Therefore, before claiming anything he must make it clear that the conveyance in question was one of which a man of his build, weight, and age ought not to have been asked to make use.

Viator should write to the sanitary authority and complain. By so doing he will be putting the neighbourhood under an obligation.

"ANTISEPTIC MIDWIFERY."

To the Editors of THE LANCET.

SIRS,—The best antiseptic I know of for vaginal and uterine irrigation is a solution of silico-fluoride of potassium. This can be used in stronger solution than was advised by the introducers of salufer, and I have never seen any bad effects from the use of the saturated solution. But I reserve the strong solution for the treatment of cases already infected, as on a raw surface it causes smarting. I am of opinion that corrosive sublimate often does harm by lowering tissue vitality just when it is most required. I have had better results with salufer in the treatment of bad compound fractures, foul and extensive wounds, and the like, than I have observed under any other treatment. It is the only chance in puerperal fever of a severe type, and should be persevered with, but in such cases the practitioner who is content with one irrigation in the twenty-four hours gives neither the patient nor the drug a chance. In conclusion I can honestly say that I do not remember a case in which I have found reason to question the efficacy of the silico-fluoride. I am, SIRS, yours, &c.,

Coventry, March 14th, 1897. F. FAULDER WHITE, F.R.C.S. Eng.

To the Editors of THE LANCET.

SIRS,—I should like to add a word or two to the interesting discussion which is now taking place in connexion with the above subject. Corrosive sublimate, biniodide of mercury, and carbolic acid, especially for external antiseptis or asepsis—i.e., of the hands, instruments, &c.—are, of course, most excellent, but I think for vaginal and intra-uterine douching permanganate of potash should have the preference. Given a really severe case of puerperal fever or of sapræmia, call it which you will, frequent douching—i.e., every three or four hours—with a hot solution of permanganate of potash is most important. Apart from the danger from absorption of carbolic or mercury in using, say, a 1 in 2000 solution of the biniodide so frequently, I have certainly noticed in two or three cases, notably in one in which the temperature rose to 106° F. during a relapse, that the temperature was more favourably modified by a fairly strong permanganate intra-vaginal douche than by the biniodide. Very generally it is necessary to use an intra-uterine douche twice daily, and a vaginal douche in between times every three or four hours. This douching should be performed by the doctor himself; it should not be left to a nurse, however skilful she may be, until the patient is practically out of danger. As an adjunct to the above quinine should almost always be given—three grains with ten minims of dilute nitric acid in half an ounce of chloroform water every three hours is a good formula. Five to ten grains of quinine in a cachet may be also given if necessary. Too large an exhibition of quinine given early in the case is liable to produce vomiting and diarrhœa—a most serious contingency. By close personal attention early in the case its duration may be very considerably limited. It has been my habit at the conclusion of a specially difficult case to advise a permanganate douche before leaving; many cases, however, never require douching at all. I am, Sirs, yours obediently,

Chester, March 17th, 1897. HENRY W. KING, M.D. Edin.

A Colleague.—We do not know the terms of our correspondent's agreement. If his employer promised to treat him as a partner, waiving the usual introduction of capital in his favour, then we can understand that he ought to have a voice in the conduct of the practice. But if "A Colleague" was engaged to assist in the work under his principal's direction, it seems to us that it is his duty to perform the share allotted to him, whatever that share may be.

A NEW UNIVERSAL PROVIDER.

THE Universal Information Office is a sanguine body. According to its prospectus, "it will be perceived that information on any subject under the sun can be obtained through this office." We fancy that we could, all the same, pose this office, for to say nothing of the stock puzzle, "What was the name of Moses' mother-in-law?" there are many other insoluble problems. We notice that the office undertakes to give medical information, and that inquiries from ladies may be addressed to "Lady Medico, care of Universal Information Office, when they will be attended to by a fully qualified lady doctor." Diagnosis and treatment by correspondence are, to say the least of it, risky when the information is supplied only by the patient.

Steps is strongly advised not to advertise in the local papers. Notice of change of address should for obvious reasons be sent only to a practitioner's own patients.

"AN INSOLENT ADVERTISEMENT."

To the Editors of THE LANCET.

SIRS,—My attention has been called to a paragraph in THE LANCET of March 13th concerning myself and my manner of conducting my business. Your mode of expression would make it patent to any unprejudiced person that the article was actuated by other motives than those which are supposed to influence a responsible paper. I am at liberty, I assume, to pursue my calling in my own manner, provided I use only legitimate and honourable means; and far from my circular having given offence to the medical profession, allow me to assure you that I have been most agreeably surprised at the results. I presume that you will have the justice to insert this protest against such an abominable misuse of your columns as the article referred to. I am glad to find that instead of adopting the advice tendered to them in the paragraph referred to—i.e., to write me a rude letter telling me to mind my own business—many members of the faculty still continue to send me their patients for me to correct their errors of refraction and accommodation and supply suitable lenses, and some of them even go so far in supporting what you are pleased to refer to as my insolence and impertinence by coming to me for spectacles (made up to my own prescription after examining their eyes) for their own use. The use of the words "insolent" and "impertinence" in your paragraph is calculated to hold me up to contempt and ridicule, and I regard them as distinctly libellous; and as my circular in no way justifies such language being used I must ask you to withdraw that portion of your criticism. I in no way do, nor could, object to a fair comment, but I contend you have far over-stepped the fair line. I await the issue of your next number and the manner in which you deal with this matter. Unless you dispose of it to my satisfaction I reserve to myself every right I may possess. Yours, &c.,

FRANK HOWARD.

83, Great Portland-st., London, W., March 22nd, 1897.

*** We subjoin Mr. Frank Howard's circular.—ED. L.

SIGHT SCIENTIFICALLY TESTED FREE OF CHARGE.

Patronised by the Central London Ophthalmic Hospital; the Miller Hospital, Greenwich; the St. Saviour's Union, Walworth; the Uxbridge Union; the St. Marylebone Infirmary; the Metropolitan Hospital Sunday Fund; and the Leading Members of the Medical Profession.

FRANK HOWARD,
LATE MANAGER TO E. S. PICKARD AND CO.,
Consulting Ophthalmic Optician.

83, Great Portland-street, London, W., Jan. 1st, 1897.

DEAR SIR,—I have much pleasure in informing you that I have recently added very considerably to my plant and staff, and in future shall be able to execute all orders for spectacles, or any optical instruments, with greater promptitude than, and the same accuracy as, heretofore.

I have a consulting room and dark room fitted with electric light and all the latest improvements, together with all necessary lenses, frames, types, and instruments, which I shall be happy to place at your disposal any time you wish to examine a patient here; or if you kindly send to me any patient whose errors of refraction or accommodation require correction I should be glad to diagnose the case, and submit my prescription to you for verification and approval free of charge. Should you entertain my offer I would like to forward you for perusal copies of a few of the many testimonials and recommendations I hold from medical men (mainly in practice in the West-end of London), who are good enough to entrust me with their eye work.

I need hardly say the testimonials, &c., referred to are not for general publication, but were given to me upon the distinct understanding that they were only shown to members of the medical profession.

In all cases of patients introduced to me by the faculty I make the examinations and take all measurements personally.

Hoping to be favoured with a share of your patronage.

I remain,
Faithfully yours,
FRANK HOWARD.

W. H.—The qualifications would come up to the Board's requirements.

THE PRUDENTIAL ASSURANCE COMPANY, LIMITED.

THE vast extent of the business transacted by the Prudential Assurance Company proves that the duty of providing for the future is being more and more realised by the public. The report and accounts for 1896 have now been circulated, and show a very considerable increase in the operations of the company over those for 1895. The number of policies issued in the ordinary branch during the year was 64,241, assuring the sum of £6,507,820 and producing a new annual premium income of £354,526; the premiums received during the year were £2,543,262, being an increase of £239,249 over the year 1895; the claims of the year amounted to £588,874; the number of deaths was 4598, and 365 endowment assurances matured; the number of policies in force at the end of the year was 455,795. In the industrial branch the premiums received during the year were £4,578,793, being an increase of £226,168; the claims of the year amounted to £1,706,481; the number of deaths was 183,969, and 1630 endowment assurances matured. The total number of policies in force at the end of the year was 12,130,542; their average duration is almost exactly eight years. The assets of the company in both branches are £27,059,111, being an increase of £3,143,221 over those of 1895. Of this sum £5,950,000 are invested in loans on the security of county council, municipal, and other rates. The company's endowment assurances and other forms of making provision for old age are largely taken advantage of by the public, the number of policies securing benefits at the age of sixty years and upwards being over 550,000, and securing capital sums exceeding £23,000,000. The jubilee of the company will be reached in the year 1898, and the directors recommend £50,000 to be set aside out of the surplus shown for 1896 to be applied for the benefit of the in-door and out-door staffs. The affluent circumstances of the company are no doubt in a great measure due to the skill and care of the medical referees, whose services, all things considered, seem to deserve some pecuniary recognition out of the surplus mentioned.

M.B.—It would have been more in accordance with professional etiquette if B. had ascertained A.'s position before accepting the invitation of the club.

THE EXTRACTION OF WANDERING NEEDLES.

To the Editors of THE LANCET.

SIRS,—*A propos* of the extraction of needles from the human body under anæsthesia and with a cutting operation—the terrors of a nervous subject—will you permit me to mention a simpler and more expeditious method, applicable wherever the tissues are lax and yielding, and when the needle is obviously a "traveller," and therefore *must* have a point. Provide two firm corks of moderate size and a pair of small pointed scissors, if forceps are not at hand. Apply the corks to each extremity of the foreign body, make a quick, decided thrust of approximation in the direction of its length, and the needle will be found to have perforated the skin and embedded its point more or less deeply within one of them. The grasp of the scissors upon its shaft will ordinarily suffice for an immediate extraction.

My only apprehension would be that in the present attitude of the public towards the profession the patient might not deem a fee necessary for so apparently trivial a service.

I am, Sirs, yours very truly,
Munich, March 16th, 1897. H. WEBSTER-JONES.

Mr. Stephen Coleridge.—If our correspondent knows that being licensed to do some things certain investigators have done other things, he is clearly remiss in not bringing them to account. We do not believe his statements. His letter practically reasserts what we have already contradicted, and our readers are in a position to judge between our correspondent's accuracy and our own.

Mr. W. A. Moynan.—We have made enquiries.

AN ACCOUCHEMENT SET.

WE have received from Messrs. S. Maw, Son, and Thompson, Aldersgate-street, E.C., a specimen of "Maw's Accouchement Set," which that firm have endeavoured to make as complete as possible from the point of view of utility, while supplying every article of the best quality. The price of the set is 25s. The articles include waterproof-sheets, towels, binders, napkins, and other things necessary for accouchement under aseptic conditions, together with tabloids of perchloride of mercury, carbolic soap, and carbolised petroleum jelly, &c. With regard to the latter, we are of opinion that glycerine of perchloride (1 in 1000) is best for the fingers. But why is it necessary to supply such a dangerous poison as perchloride of mercury in such a set? The antiseptics to be used should be matters for the practitioner's consideration.

A. M. B. asks if any of our readers can inform him where he can obtain the smallest and lightest one-horse landau or opening brougham, fitted with break for a hilly district in Wales, to hold three inside. The price must be moderate and, if possible, on hire purchase system.

THE DETERMINATION OF THE SEXES.

WE have received a copy of a circular disseminated by a Mr. John Campbell, of the neighbourhood of Penybont, in which he offers to reveal the secret of procuring male or female offspring at will in return for the fee of a guinea. Mr. Campbell is trying to obtain money under false pretences. Possibly he believes in his method, and possibly some lucky guessing has confirmed him in the belief, but the fact remains that he cannot give any reliable assistance to the persons who pay his fee.

Torquay.—Both methods of treatment have their uses in legitimate therapeutics, and as such belong to the practice of the profession at large. It must be left to our correspondent's medical attendant to decide which method, if either, is required in the case in which he is interested, and also to suggest what special medical advice, if any, should be sought.

"MATERNAL IMPRESSION ON THE FŒTUS."

To the Editors of THE LANCET.

SIRS,—With your permission I also would like to record a curious instance of maternal impression on the fœtus which occurred within my own knowledge. The daughter of a medical practitioner whose "studie was (not) but litel on the Bible," and she herself well posted up in Genesis, chap. xxx., ver. 37 *et seq.*, was alone in her house, sitting in a back room, intently preparing her expected baby's wardrobe (expectation six months hence). Her uncle called with the present of a hare, and, after knocking, ringing, and failing to attract attention, walked in, opened the room door where she was sitting, threw in the hare, but "spake not a word." From that moment of fright she "vowed and declared" her belief that some "untoward event" would happen to her baby; and sure enough the unfortunate baby (a girl) was born with the so-called hare-lip. I am, Sirs, yours faithfully,
March 19th, 1897. M.R.C.S., L.S.A.

Inquirer.—We do not know what proof our correspondent has that the gentleman in question is not sincere in his devotional exercises. But we think it a great pity that handbills should be disseminated announcing the appearance of the medical preacher and singer to the public. This proceeding certainly savours to us of improper advertisement, particularly as the medical man is described as Dr. —— and does not appear to possess the degree of a university.

"THE PANCREAS AS AN ARTICLE OF DIET."

To the Editors of THE LANCET.

SIRS,—In reference to the letter of Dr. T. Wilson Parry on this subject in THE LANCET of Dec. 19th, 1896, I may say his experience coincides with mine. Desiring to give a patient, the subject of exophthalmic goitre, thymus gland, I went to a slaughter-house in order to assure myself that I would get exactly what I ordered. When I mentioned sweetbread the butcher said there were three in the calf—the throat, heart, and stomach sweetbread—being the thyroid, thymus, and pancreas respectively, and that the heart sweetbread was very small in the bullock. I am informed, too, that the testicles make a particularly tasty dish and are served under the fanciful name of "mountain oysters."

I am, Sirs, yours truly,
Philadelphia, Feb. 25th, 1897. W. E. ROBERTSON.

Dr L. Kidd.—A table giving the percentage composition of various beef products appeared in an article in THE LANCET of March 7th, 1896.

R. A.—There is no such place.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Birmingham Post, Western Morning News, Bradford Argus, Scotsman, Newcastle Journal, Bolton Chronicle, Blackburn Standard, Times of India, Pioneer Mail, Ceylon Independent, Walthamstow Guardian, Manchester Guardian, Huddersfield Examiner, Liverpool Courier, Daily Mail, Builder, Preston Herald, Yorkshire Post, Glasgow Herald, Montreal Star, Brisbane Courier, Architect, Sussex Daily News, Leicester Post, Hereford Times, Leeds Mercury, Bridgwater Independent, Liverpool Daily Post, Oxford Journal, Newbury Weekly News, Monmouth Beacon, Wolverhampton Chronicle, Ceylon Observer, East Essex Advertiser, Woodford Times, The Sun, Cheltenham Mercury, Bath Journal, Llandudno Directory, Bristol Mercury, Southampton Observer, Salisbury Journal, Beverley Guardian, Royal Cornwall Gazette, Dover Express, Doncaster Chronicle, Lincolnshire Echo, Dundee Advertiser, Sanitary Record, Local Government Chronicle, Reading Mercury, Weekly Free Press and Aberdeen Herald, Hertfordshire Mercury, Lancaster Observer, Cornish and Devon Post, Mining Journal, Surrey Advertiser, Stratford Express, Local Government Chronicle, Surrey Comet, Galignani's Messenger, Glasgow Evening News, Le XIXe Siècle (Paris), West Middlesex Herald, Staffordshire Weekly Post, Midland Times and Rugby Gazette, Ely Guardian, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. T. D. Acland, Lond.; Abstainers and General Insurance Co., Birmingham, Chairman of; Messrs. Armbrecht, Nelson, and Co., Lond; Anglo-Swiss Condensed Milk Co., Lond.; Ausstellung Neuer Erfindungen, Vienna, Director of; Abstainer, Lond.; Alpha, Lond.

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Letters, each with enclosure, are also acknowledged from—

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E.—Epsilon, Lond.; E. J. P., Hayes.

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